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**Hei oranga mo ngā wāhine hapū  
(o Hauraki) i roto i te whare ora**

by

**Stephanie Kay Palmer**

A thesis submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy

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*for my mother Alice,  
my sister Barbara,  
my children, and  
te whare tangata*

# Ngā Mihi

Ko Moehau te maunga  
Ko Tikapa te moana  
Ko Horouta te waka  
Ko Ngāti Porou te iwi

E ngā hoa, e ngā tuakana, e ngā rangatira koutou te hunga i awhina mai i tēnei kaupapa, tēnei te mihi o te ngakau kia koutou kātoa. This thesis would not have been possible without the guidance, support and aroha of many people. First of all, I would like to thank the participants, some who are now my friends, for their time, co-operation and commitment to see this research through. It was a pleasure to meet you all. I would like to thank the people and organizations who have given me financial support and assistance in other ways – the Hauraki Māori Trust Board, the Social Science Research Funds Committee; the Health Research Council; Piki te Ora; the Māori Purposes Board; Health Waikato; the Ministry of Women's Affairs; Otago University Grants Committee; Waikato University Federation of Women; Zonta Foundation; Ngāti Porou ki Hauraki; Te Runanga ā Ngāti Porou, the Māori Education Fund and Manaaki Tauira.

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# Abstract

This thesis had four main objectives. In the first instance, it aimed to improve understanding of psychosocial variables which may mediate the quality of Māori childbirth experience, namely: social support, coping strategies, cognitive appraisal, ethnic identity and psychological wellbeing. Secondly, it aimed to examine the relationship between these variables and the quality of childbirth experience. Thirdly, this thesis aimed to develop and pilot-test an instrument for the measurement of waiora among Māori. And fourthly, this thesis aimed to test whether waiora was a predictor of participants' childbirth experience.

Thirty-one self-identified Māori women took part in the research. All participants gave birth at Thames Hospital in Hauraki during 1994. Attention is drawn to various ethical and methodological issues which have importance in the development of kaupapa Māori and Māori centred health research paradigms, such as, the role of koha, the validity of kanohi-ki-te-kanohi recruitment strategies and the need for collaborative decision-making processes.

Prenatal waiora, ethnic identity, cognitive appraisal, coping strategies and social support predicted both quantitative and qualitative indicators of perinatal outcome. Obstetric technology was a very strong predictor of maternal postpartum perceptions and feelings of satisfaction or wellbeing. A preliminary model of the relationship between prenatal and perinatal predictors of Māori childbirth experience is presented.

This research identifies the need to develop knowledge on psychosocial mediators of Māori childbirth experience. It is likely, however, that the quality of Māori childbirth experience will benefit from strategies which foster feelings of waiora and ethnic identity. The likelihood of a relationship between waiora and te ao Māori childbirth resources may hold particular interest for Māori. A range of strategies to improve the reliability and validity of *Hōmai te Waiora ki Ahau* as a tool for the measurement of waiora have been identified. As an outcome measure, this tool may have value in a range of contexts.

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# **Te Korero Whakamarama**

## *Introduction*

This thesis addresses the issue of Māori childbirth. It is driven by a desire for fundamental change. In the short-term, this research endeavors to identify a range of strategies which may well help to improve the quality of our current experience. At the same time, it aims to ensure the knowledge-base which underpins discussion of Māori childbirth issues is both in line with international forums and relevant within the context of Māori health development goals. In the long-run, it is hoped this thesis will contribute to the establishment of processes which promote and foster Māori capacity to re-construct and re-claim a Māori-centered childbirth ethos.

The idea that experience of psychological wellbeing during pregnancy will have a beneficial effect on the quality of childbirth experience is not new. Indeed, a large and burgeoning body of overseas literature has shown that variables indicative of psychological wellbeing can have a favourable influence on a range of childbirth outcomes (Bennett et al, 1985; Brewin & Bradley, 1982; Cheung, 1994; Doering et al, 1980; Dunkel-Schetter et al, 1996; Edwards & Waldorf, 1984; Enkin et al, 1989, 1995; Inch, 1994; Manning & Wright, 1983; Norbeck & Tilden, 1983; Oakley, 1988; Slade et al, 1993; Tanzer & Block, 1976; Wideman & Singer, 1984). For example, experience of psychological wellbeing, during pregnancy and/or labour, has been advantageously associated with infant gestation, birthweight and apgar scores as well as the use of intervention techniques, experience of obstetric complications, the duration of labour and the length of hospital stay (Collins et al, 1993; Dick-Read, 1942; Kennell et al, 1991; Le Boyer, 1975; Lidderdale & Walsh, 1998; Oakley & Houd, 1990; Odent, 1984; Tew, 1998). Variables indicative of psychological wellbeing have also been positively associated with maternal attitude to the newborn, willingness to breastfeed, satisfaction with birth events, feelings of emotional wellbeing and experience of postpartum depression (Allen, 1998; Beck et al, 1980; Bennett et al, 1985; Campero et al, 1998; Green et al, 1990; Scott & Rose, 1972; Zax et al, 1975).

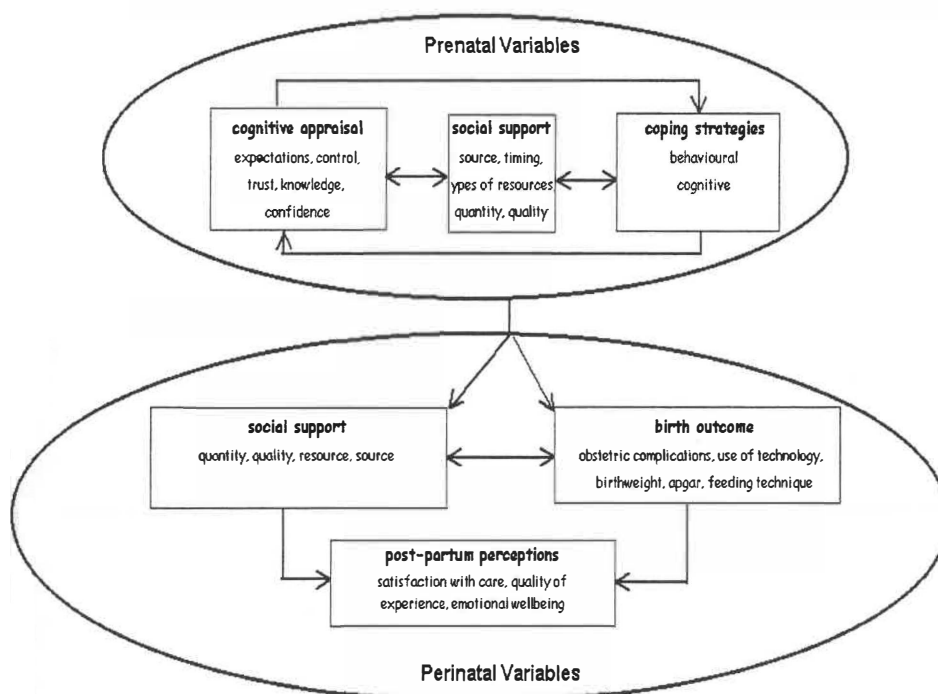
Although consensus is lacking on a definitive conceptual or operational meaning for the term psychological wellbeing, this construct is invariably associated with positive health status and/or a certain quality of life (Bowling 1991). Inasmuch it implies the possession of resources necessary to ensure the ability to cope with life events and experience feelings of, for example, high morale, optimism, happiness, confidence and satisfaction. Research on the factors which promote positive affect and alleviate experience of stress or distress is clearly relevant to an understanding of psychological wellbeing and such studies have highlighted the importance of social support, cognitive mediators and a range of coping strategies (Cohen & Wills, 1985; Folkman & Lazarus, 1985; Gottlieb, 1983; Kasl & Cooper, 1995).

Theoretically, however, social support is known to be a complex, multidimensional metaconstruct which involves various reciprocal causal processes that not only mediate experience of life events but also determine the nature of cognitive appraisal and coping strategies (Pierce et al, 1996). Similarly, the use of cognitive mediators has been theoretically linked to complex, integrated courses of action which rely on numerous subskills or operative capabilities and dynamic processes of multiple appraisal (Bandura, 1991; Madden et al, 1992). All-in-all, it is clear that psychological wellbeing can certainly be measured by a number of indicators but there is the need to be cognizant of the fact that such indicators may in themselves represent complex theoretical constructs.

Within the vast body of overseas literature which examines the relationship between psychological wellbeing and the quality of childbirth experience, an increasingly stringent trend towards the integration of critical theoretical and conceptual issues has become evident in recent years (Allen, 1998; Campero et al, 1998; Dunkel-Schetter et al, 1996; Quine et al, 1993; Rutter et al 1993; Slade et al, 2000). The researchers involved with this sphere of interdisciplinary study have been systematically evaluating psychological predictors primarily associated with the quality of childbirth experience. On the whole, it is reasonable to suggest their work is underpinned by two main themes. Firstly, the quality of childbirth experience can be predicted by a range of prenatal and perinatal variables. And secondly, complex processes of inter-relatedness and/or reciprocal causal interaction exist within and between variables which determine the quality of childbirth experience.

Figure 1 schematically illustrates my own impression of the causal relationships between predictors which have primarily been associated with the quality of childbirth experience. In summary, this model suggests the development of prenatal coping strategies, cognitive appraisal and social support processes is not only inter-related but also influential in determining experience of perinatal social support and biophysiological aspects of childbirth outcome. A reciprocal causal relationship is also evident between perinatal social support and childbirth outcome. And all of these variables contribute to the development of maternal postpartum perceptions. Alternatively, this model also illustrates the way in which psychological wellbeing during pregnancy, ie: experience of social support, appropriate coping strategies and processes of cognitive appraisal can have a beneficial influence on perinatal indicators of psychological wellbeing, ie: experience of social support and postpartum perceptions as well as the hard indicators of birth outcome. Either way, the quality of childbirth experience is clearly a multi-faceted phenomenon which must be understood in terms of the interactions between a range of prenatal and perinatal indicators.

**Figure 1: The main causal relationships between psychological predictors associated with the quality of childbirth experience**



Within Aotearoa, there has been little acknowledgement of the theoretical paradigms which form an essential foundation for understanding quality of

childbirth issues. Ironically, however, New Zealand has invested considerable effort in research which indirectly supports the view that psychological wellbeing, during pregnancy and/or labour, has a beneficial effect on the quality of childbirth experience (Carey, 1957; Clark et al, 1986; Donley, 1986; Guilliland, 1998; Gunn et al, 1983; Maternity Services Consumer Council, 1994; Mein-Smith, 1986; Pairman, 1998; Rosenblatt et al, 1985). Such studies have shown that the place of birth, midwifery care and antenatal class attendance can influence both quantitative and qualitative indicators of childbirth outcome. Although New Zealand undoubtedly has a keen interest in the quality of childbirth issue, the bulk of our research effort has been directed towards a more general assessment of satisfaction with maternity services, particularly since introduction of the 1996 maternity reforms (Adair et al, 1999; Coopers & Lybrand, 1993; Health Funding Authority, 1999a, 1999b; Midland Health, 1994a, 1994b; National Health Committee, 1999a, 1999b).

Within New Zealand, a substantial body of research has also investigated issues associated with the quality of Māori childbirth experience. Of these studies, the majority have concentrated on identifying disparities in Māori reproductive health and, more importantly, the determinants of Māori health status including inequities in health service utilisation, lifestyle, ethnicity and socio-economic position (Alison et al, 1993; Barry et al, 1992; Benny et al, 1991; Cundy et al, 1993; Cunningham, 1993; Essex et al, 1992; Gluckman, 1972; Green, 1967; Gunn et al, 1983; Hutton et al, 1982; Ministry of Health, 1999b; Mitchell et al, 1987; Morris, 1968; Pomare & de Boer, 1988; Public Health Commission, 1994; Reddy & Campbell, 1985; Salmond, 1976; Sceats, 1984, 1988; Te Puni Kokiri, 1993; van den Berg, 1985).

Others have not only demonstrated evidence of Māori dissatisfaction with maternity services but have also attempted to identify the components of an ideal service for Māori (Bryant, 1994; Ellis, 1998; Fox, 1997; Gunn et al, 1983; Harris, 1994; Midland Health, 1994; National Advisory Committee on Core Health & Disability Services, 1993; Ora Toa Health Unit, 1992; Ratima et al, 1994; Māori Working Group, 1995; Rolleston, 1991; Ropiha & Middleton, 1993; Salmond, 1976). Within this literature, several authors have engaged in an interesting debate about the way in which Māori satisfaction with maternity services may be influenced by psychological variables like, for example, feelings of whakama,

cultural incongruity, inappropriateness, powerlessness and/or a loss of control. It is clear, therefore, that Māori are astutely aware of the relationship between psychological wellbeing and the quality of childbirth experience. Towards this end, at least two recent studies have implemented theoretically-based methodologies to investigate experience of social support among Māori mothers (Goodwin, 1996; Houkamau, 2000).

Nevertheless, there is an evident need for New Zealand to refine its research paradigms for examining the quality of childbirth experience. It is clear, for example, that the development of knowledge on psycho-social predictors of childbirth experience would contribute much to understanding on the quality of childbirth issue. This position, therefore, provides the rationale for two of the four objectives this thesis hopes to achieve. These are:

- Objective 1** to improve understanding of the manner in which Māori women develop and/or use psychological variables known to be associated with the quality of childbirth experience, namely prenatal social support, cognitive mediators and coping strategies and perinatal social support;
- Objective 2** to examine the relationship between these variables and look at their influence on qualitative and quantitative indicators of perinatal outcome in a group of Māori women.

The third and fourth objectives relate to the epistemological framework within which this research is located. More specifically, the notion of Kaupapa Māori research emerged in Aotearoa at about the same time that the methods for this thesis were being developed (Hikitapua, 1992; Irwin, 1994; Palmer, 1991; Smith 1992; Te Awekotuku, 1991). Although conceptualizations of a Kaupapa Māori research paradigm were not at all clear during this period, the methodologies engaged in this study were, nevertheless, influenced by my own impression of its' underlying principles and an inherent desire to simply ensure the use of culturally appropriate processes. Others have since clarified and endorsed the importance of such processes (Cunningham, 1998; Durie 1994, 1996 & 1998; Durie A, 1998; Health Research Council of NZ 1998a, 1998b & 1998c; Smith 1996 & 1999; Walsh-Tapiata, 1998).

Pita Sharples, for example, recently recapitulated the sentiments and principles which underlie implementation of a Kaupapa Māori research paradigm (2001). In particular, he highlighted the importance of strategies which foster:

- tino rangatiratanga, the authenticity of Māori knowledge, the use and development of Māori pedagogy and kawa, the expression of whanaungatanga and are also
- emancipatory and visionary.

Broadly speaking, therefore, the term Kaupapa Māori is used to describe the way in which thoughts, ideas and practices are formulated and framed. It is related to being Māori, it is connected with the expression of cultural relevance and it is consistent with the objectives of a global indigenous struggle for autonomy and self-determination, the development of appropriate knowledge and the use of acceptable behaviour. Above all, the notion of Kaupapa Māori encourages freedom, innovation and the opportunity for multiple methodologies to contribute to a body of knowledge which has the potential to transform the future and shape or create the various ways in which Māori can be Māori.

**Table 1: A taxonomy for locating research**

	research not involving Māori	research involving Māori	Māori-centred research	Kaupapa Māori research
<b>Māori:</b> as participants as members of the research team methods/tools Analysis of data	none none mainstream mainstream	minor typically junior mainstream mainstream	mostly/all typically senior Māori/mainstream Māori/mainstream	mostly/all only Māori Māori/mainstream Māori
	↓	↓	↓	↓
<b>Contribution to Māori knowledge</b>	none	produces mainstream knowledge of Māori	Māori knowledge (possibly measured against mainstream standards)	Māori knowledge (meets Māori expectations & quality standards)

Source: Cunningham (1998)

Within the health arena, the need to distinguish Kaupapa Māori research paradigms from a range of other methodologies which may also produce Māori knowledge has been identified. A useful taxonomy has been developed to classify research in terms of the degree of Māori involvement, the use of Māori methodologies and its' contribution to Māori knowledge (Cunningham, 1998). Table 1 presents four categories which can be used to locate Māori health researchers and research. Against this framework, this particular thesis is more in line with a Māori-centered paradigm rather than one which is Kaupapa Māori. Within this general context, the rationale for the two remaining objectives of this thesis can more easily be understood. In particular, these objectives aim to:



**Objective 3** develop and pilot-test an instrument for the measurement of psychological wellbeing among Māori<sup>1</sup>; and

**Objective 4** test whether waiora is a predictor of Māori childbirth experience.

The desire to develop an instrument which has the capacity to measure waiora is a fundamental research goal. It is clear that such an instrument, as a Māori measure of psychological wellbeing, would have relevance in a range of contexts beyond the childbirth arena. Considerable weight has, therefore, been given to discussion of issues associated with the development and feasibility of a tool for the measurement of waiora. In this particular context, the research issue of importance is whether waiora is able to predict the quality of Māori childbirth experience.

In summary, *Hei oranga mo ngā wāhine hapū (o Hauraki) i roto i te whare ora* is a fledgling attempt to evaluate the use of psychological variables known to be associated with the quality of childbirth experience in a group of Māori women. This research is clearly exploratory and can only hope to inform debate and assist the development of more specific hypotheses. Chapters One to Five introduce the tapestry of knowledge and framework of inter-related issues around which this thesis has been constructed. In particular, Chapter One considers the origins of a Māori childbirth ethos and looks at psycho-social variables which might have influenced Māori childbirth experience prior to the introduction of medicalised procedures. Chapter Two describes the development of a national maternity system in this country and its' structure at the time of study. Chapters Three to Five provide a general context for understanding the rationale which underpins this research. Chapter Three, for example, considers theoretical issues which would seem to have relevance for a study on the quality of childbirth experience. Chapter Four reviews the outcomes of existing literature on psycho-social mediators of childbirth experience. And Chapter Five looks at the breadth of knowledge which described Māori childbirth experience when recruitment for this project commenced.

This thesis is not experimental nor has it set out to investigate or pursue complex theoretical problems which besiege the measurement of social support, cognitive mediators and coping (Bandura, 1992; Kasl & Cooper, 1995; Madden et al, 1992; Pierce et al, 1996; Rutter et al, 1993). Rather, it has used this body of literature to tease out themes that would seem important to include in a study of

<sup>1</sup> In te reo Māori, Pere (1987) has suggested the term waiora expresses a concept of psychological wellbeing.

psychological variables which may influence the quality of Māori childbirth experience. Internationally, this approach is consistent with methodologies that have been adopted elsewhere (Allen, 1998; Campero et al, 1998; Dunkel-Schetter et al, 1996; Rutter et al, 1993; Slade et al, 2000). This thesis also makes the point, however, that psychological variables known to be associated with the quality of childbirth experience would seem to be inherent indicators of psychological wellbeing. Notwithstanding the manner in which such variables may directly and independently measure outcomes, this thesis considers whether a Māori construct of psychological wellbeing might also be a predictor of Māori childbirth experience. With this goal in mind, Chapter Six discusses how psychological wellbeing is normally defined and identifies the components which would seem to be important in a Māori construct. This chapter describes the development of *Hōmai te Waiora ki Ahau* as a tool for the measurement of waiora and presents the outcomes of a small pilot-test on the validity of this construct.

Chapter Seven not only explains the instruments and methodologies implemented during the period under study but also provides some insight on various obstacles which hindered progress along the way. In Chapter Eight, the results of this thesis have been grouped into three main sections. In the first instance, this chapter provides a general description of datum obtained for the research variables. In addition, this chapter uses a statistical framework to analyze the validity and reliability of *Hōmai te Waiora ki Ahau* as a tool for the measurement of psychological wellbeing among Māori. And thirdly, this chapter examines the extent to which the variables under study were able to predict the quality of participants' childbirth experience.

Chapter Nine completes this thesis with a general discussion of its' achievements and implications. A summary of the main outcomes is presented along with discussion on the extent to which this thesis achieved the four underlying objectives. This chapter identifies strategies which may help to improve the reliability of *Hōmai te Waiora ki Ahau* and the need for Māori measures of health and wellbeing that can be applied in a range of contexts. Some consideration is also given to the implications of this thesis for Māori maternity service delivery and the various ways in which this thesis has contributed to the knowledge-base which informs debate on the quality of Māori childbirth experience.

In conclusion, *Hei oranga mo ngā wāhine hapū (o Hauraki) i roto i te whare ora* belongs to three larger categories of study. This research clearly sits among those which test the notion that psychosocial variables and interventions, during pregnancy and childbirth, can promote and enhance the physical health of mothers and babies (Oakley, 1992). In addition, it is among studies which try to untangle the direct and indirect implications of ethnicity and culture on Māori health status (Durie, 1998). And lastly, this thesis is part of a burgeoning literature that seeks to clarify the epistemology which underpins Kaupapa Māori and Māori-centered health research paradigms (Cunningham, 1998).

In reading this thesis, there are a few points which readers may wish to bear in mind. The first relates to the use of te reo Māori. In some cases, translations are provided within the text but the glossary will help to explain other words and phrases. At the outset, it is important to understand that this thesis describes data collected during the early nineties. And finally, some readers may wonder whether this thesis was in any way influenced by my own orientation to the subject-matter under study. In this regard, it would be true to say that the choice of this particular topic was, indeed, driven by my own experiences of childbirth as a Māori woman. I fully support the use of strategies which allow Māori to not only experience woman-centered childbirth techniques but also participate in the reclamation of a te ao Māori childbirth ethos. At the same time, however, I am a psychologist with a background in hard sciences. This thesis, therefore, was primarily driven by my desire to study the relationship between psychosocial variables and the quality of Māori childbirth experience within a rigidly scientific paradigm. Ko koe ki tēnā, ko ahau ki tēnei kīwai o te kete. Through co-operation and the sharing of skills, our objective will be achieved.

# **Chapter One**

## **Te Whare Tangata**

### *The house of humanity*

*Ko Papa-tū-ā-nuku, ko Papa-tū-ā-nuku.  
Te whenua, te whenua.  
Te wahine tino hirahira, te wahine atua, te ihi, te mana, te wehi.  
Ko Papa-tū-ā-nuku te tino whaea o te Taiao.  
Whakamana i te wahine o te ao mārama.  
Te ao kikikiko, he wahine – he wahine, kia toa, kia toa.  
Te whare tangata hei whakamana i te Taiao, hīauē-hīauē-hīauē.  
He aha te taonga nui o te ao?  
He tangata – he tangata, he tangata.  
Tihei mauri ora - tihei mauri maha.  
Au! Au! Aie ha! Hi!<sup>2</sup>*

For Māori, Te Tiriti o Waitangi holds the promise of full participation in New Zealand's society and a secure cultural identity (Law Commission, 1999)<sup>3</sup>. Māori priorities for health development also highlight the importance of processes through which Māori can fully participate in society, utilise quality health services and access te ao Māori (Durie, 1998). The formation of Māori identity is, thus, linked to the accessibility of Māori resources and the institutions of Māori culture (Durie, 1995a; 1995b; 1996; 1998; Rangahau, 1977; Walker, 1989). In accordance with this theme, New Zealand is aware of the need to become more responsive to Māori world views and Māori, themselves, have increasingly embraced *mua te whaia, muri te taea* strategies to facilitate the achievement of this goal (Henry & Pene, 2001; Kahukiwa et al, 1995; Mikaere, 1995; Royal, 1998; Takino, 1998).

Such strategies are not new. Māori have always made rich use of knowledge about the past in an effort to make sense of present and future directions. Arohia Durie explains:

<sup>2</sup> Mihipeka Edwards (1995) wrote this tribute to the dignity of women as the house of humanity.

<sup>3</sup> Treaty of Waitangi implications for Māori health are discussed in Chapter Two.

“Through the telling and interpretation of the Māori pantheon, younger generations of Māori have, from the earliest times, been able to situate themselves within the web of relationships set out in the cosmological narratives. As whakapapa is told and retold, the interconnections between the living and the ancestors, the deities and the land becomes clear. From the personification of the pantheon down through eponymous ancestors, the shaping of individual and collective Māori identity is set within the context of the personal, the collective and the total environment” (1997, pg 147).

In other words, behaviour is shaped by a multiplicity of factors of which our values and attitudes are important determinants. Furthermore, the pathways towards Māori identity can be conceptualized in terms of life-long cognitive processes which integrate information from a range of complementary sources. We can, therefore, accept the importance of classical narratives and understand the manner in which this information may inherently be balanced against that obtained from other sources. Arohia, for example, has suggested Māori identity is shaped by a spectrum of cosmological, chanted, whānau, colonial and contemporary narratives (1997). This line of thought validates the use of strategies to reconstruct and reclaim matāuranga Māori. Such courses of action are by no means an attempt to fossilize or snap-freeze Māori knowledge (Belich, 1996). Rather, they are part of a dynamic, proactive movement within which Māori are acutely aware that access to te ao Māori is critical to good health and the development of a secure cultural identity.

Within this context, it is interesting to think about the various ways in which the identity of classical Māori may have been shaped and/or expressed through events associated with pregnancy and childbirth. As Elsdon Best suggests:

“The native [sic] system of genesiology we shall never know in its entirety, but enough has been preserved to show that the natives [sic] of this land treated generation as a most tapu matter, and that they possess a complete ritual in connection with conception, pregnancy, parturition and care of the young” (1906, pg 205)<sup>4</sup>.

An understanding of such issues would assist discussion about the way in which Māori childbirth may benefit from access to te ao Māori. Such a profile would also provide a foundation for identifying factors which may have contributed to feelings of psychological wellbeing among classical Māori. And an understanding

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<sup>4</sup> Elsdon Best did not have a mandate to write about Tuhoe and his work has been shown to contain errors (refer Best, 1929; Mikaere, 1995; Te Matorohanga, 1865).

of these factors would seem particularly relevant to this thesis given that the research aims to examine experience of psychological wellbeing among contemporary Māori during childbirth events.

This chapter, therefore, attempts to engage in a reconstruction of the values and behaviours associated with Māori pregnancy and childbirth events. The purpose of this exercise is threefold. Firstly, it simply aims to draw together various sources of information on classical Māori experience<sup>5</sup>. Secondly, it aims to identify factors that may have contributed to experience of psychological wellbeing. And thirdly, this chapter aims to provide a framework for thinking about the way in which access to te ao Māori may assist the development of Māori identity and foster experience of waiora during pregnancy and childbirth. The discussion is presented in three parts. The first section considers the evidence which suggests that mana wāhine was derived from aspects associated with female reproduction. The section on mātauranga whakawhanau looks at the knowledge-base and protocols which prepared women for pregnancy and childbirth. The final section discusses the factors which triggered change and led Māori to accept hospitalised childbirth procedures.

## **Mana Wāhine**

Ample evidence of the values and attitudes associated with pregnancy and childbirth can be found within Māori cosmogony and ethnographic accounts (Best, 1929; Buck, 1945, 1949; Cowan & Pomare, 1930; Izett, 1904; Kahukiwa & Grace, 1984; Makereti, 1938; Mikaere, 1995; Reed, 1963; Walker, 1990). Other indications of the meaning attached to such events are evident within the very concepts, semantics and symbolism invoked by Te Reo Māori and the various forms of cultural expression.

In the haka which heads this chapter, Mihipeka Edwards pays tribute to Papa-tū-ā-nuku, the mother earth and the primal mother of humanity (1995). In doing so, Mihipeka also pays tribute to women and their significance as te whare tangata. There is no doubt that female reproductive organs and the birthing process provide the single most important paradigm for explaining creation of the world and the very existence of human beings. Through the story of Papa-tū-ā-nuku, women remain forever central to the blueprint for creation, the cycle of

human life and the continuity of descent lines. The principles of whakapapa and whenua demonstrate the interconnectedness between Papa-tū-ā-nuku and women in their role as te whare tangata.

### ***Whakapapa***

Whakapapa has two meanings. Although it is often the translation for genealogy, whakapapa is much more than a family tree. Literally speaking, it is both the process of going towards Papa (-tū-ā-nuku) the primal mother, and the process through which Papa was, and, is made.

In its first context, the concept of whakapapa implies the placing of layers through which Papa-tū-ā-nuku is connected to her descendants and the flow of blood that binds one generation to another. From this perspective, whakapapa is the means through which an ancestor is kept alive, even after death, it is how the ancestral line is brought down. This concept of whakapapa brings a focus to the relationship between tūpuna and mokopuna; it is the element which defines kinship groups and it is the product of childbirth ... he taura taonga e motu, he taura tangata e kore e motu<sup>6</sup>.

It is clear that the principle of establishing and re-establishing whakapapa formed an important basis for sexual alliance both within and between hapū. In the waiata *Uia mai Koia*, Ngāti Porou rejoice in the knowledge that a whakapapa link with their rangatira Paikea was so sought after that women would obstruct his path in the hope that he would give them the opportunity to carry his uri. For the purpose of reproduction, siblings at times formed relationships with the same partner and Māori, in general, were clearly comfortable with the idea that both men and women could have more than one spouse either simultaneously, or, throughout life (Best, 1929; Binney & Chaplain, 1996; Makereti, 1938; Metge, 1995; Mikaere, 1995; Orbell, 1978). Upon being criticised for entering into a sexual relationship shortly after giving birth to a child by another man, Erenora Taratoa of Ngāti Raukawa said “Ka rawe ra māua ko tāku tara ki te hapai ewe ki ngā whenua”<sup>7</sup> and composed the famous pātere *Poia atu tāku Poi* in which, through the figurative journey of twirling poi, she travels the length of the country

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<sup>5</sup> This chapter draws on a number of publications by Māori and non-Māori as initial platform for considering this issue in English.

<sup>6</sup> A gift connection may be severed but not so a human link.

<sup>7</sup> See how well my womanhood and I bear the afterbirth throughout the land

establishing her whakapapa links with chiefly descent lines (Mikaere, 1995). He kōpū puta tahi, he taura whiri tātou, whringa nuku, whiringa a rangi, te whatia e<sup>8</sup>.

Mihi Kotukutuku, Heni Brown, Reremoana Koopu and Makereti Papakura talk about their experience of taumau, or, betrothal in order to protect and preserve whakapapa (Binney & Chaplain, 1996; Makereti, 1938; Stirling, 1976). Associated with taumau, is the concept of puhi within which a woman's potential to reproduce was strictly safeguarded until it could be used as to establish a significant alliance. Within hapū, Te Matorohanga (1865) draws attention to the custom of taunaha wahine, taunaha tane within which reproduction is viewed as a rite of passage to adulthood and the means through which links within the kinship group are strengthened.

The despondency associated with a threat of lost whakapapa is clearly demonstrated in the concept of whare ngaro and the many strategies which were available to circumvent its occurrence (Best, 1929; Binney & Chaplain, 1996; Makareti, 1938)<sup>9</sup>. In stark contrast, there were clearly situations when women used drastic measures to prevent the establishment, or continuation, of a descent line (Best, 1929; Binney & Chaplain, 1996; Gluckman, 1972, 1981; Hunton & Graham, 1977; Orbell, 1978). Among classical Māori, these sources suggest slavery, illicit connection and liaison with a European were the main reasons for recourse to procedures to preclude whakapapa.

The second, equally important, meaning of whakapapa relates to the sense of causation. Within this context, the concept of whakapapa invokes an awareness of the processes which made Papa (-tū-ā-nuku). Hence, the tripartite web of connectedness between Papa-tū-ā-nuku, women and whakapapa is tied to the evolution of existence, the process of creation and the actual act of giving birth.

In this context, the conceptual basis for Papa-tū-ā-nuku's genesis is attributed to te ira atua, supernatural beings and an omnipotent latent energy (Buck, 1949; Kahukiwa & Grace, 1986; Reed, 1963; Walker, 1990)<sup>10</sup>. The cosmological narrative presents Te Kore as the pre-conceptual period, an initial void but infinite realm of potential being. Within Te Kore there were successive stages of increase and consciousness which led to the establishment of Te Pō - the

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<sup>8</sup> Issue of one womb, a rope of many strands, woven on earth and in heaven.

<sup>9</sup> The end of a descent line through an inability to conceive and/or successfully reproduce.

<sup>10</sup> I am aware of differences in the interpretation of these events. This discussion focuses on the common theme which is the association with female experience of conception, labour and childbirth.



celestial realm, domain of the Gods and the source of mana and tapu. Te Pō is generally seen to comprise twelve stages which are clearly associated with the process of female reproduction. The first six stages continue to represent the period of pre-conception<sup>11</sup>. Little by little, the embryonic atua progressed from potential to conception, growth and establishment. The concept of Te Pō is, thus, likened to an all-encompassing womb within which Papa-tū-ā-nuku along with other primal atua emerged. Upon maturity the female Papa-tū-ā-nuku mated with Te Ranginui-e-tū-nei and they began to procreate. Clasped together as one deity in eternal night over countless aeons, the primeval parents of humanity produced many offspring which flourished within their embrace. Nevertheless, some of their brood grew to resent the confinement of Te Pō and made preparations for an escape.

Papa-tū-ā-nuku is said to have felt the discomfort of labour as her children organized their rebellion. Accordingly, this period of Te Pō is characterised by six stages which astutely personify the various phases of labour during which mother and infant prepare for the journey of childbirth (Te Matorohanga, 1865)<sup>12</sup>. During normal birth, every child threads the ara namunamu ki taiao as s/he enters the world. In the personification of this period classical Māori, therefore, provided a mechanism through which ngā wāhine hapū are united in the feeling and experiences of Papa-tū-ā-nuku during the dark ages of human pre-creation.

The children of Papa and Rangi were successful in their endeavour to establish Te Ao Mārama, the world of light, and, ultimately, the dwelling place of human beings. To achieve this goal, they engaged in a heart wrenching separation of their primal parents. Although distraught and weeping incessantly, the earth mother protected her children against the intense wrath of their sky father, Ranginui. In doing so, Papa-tū-ā-nuku displayed compassion, forgiveness, understanding, support and, despite personal pain, she demonstrated the ability to accept change for the sake of her children. In earth form, Papa-tū-ā-nuku continues to personify motherly attributes. She is the source of life, nourishment and growth ... ko te whenua te wai-u mo ngā uri whakatipu<sup>13</sup>

<sup>11</sup> Te Pō Tāmakū, Te Pō Poao-nui, Te Pō Kerekere, Te Pō kutikuti-kākarauri, Te Pō Uriuri, Te Pō Tiwhatiwha.

<sup>12</sup> Te Pō te Kitea, Te Pō Tangotango, Te Pō Whawha, Te Pō Namunamu ki Taiao, Te Pō Tahuri-atu, Te Pō Tahuri mai ki Taiao.

<sup>13</sup> The ability of the land to sustain human life is likened to the milk from a woman's breast for infants.

## **Whenua**

The next stage of the cosmological narrative describes the evolution of life on earth. In Te Reo Māori, the words Papa-tū-ā-nuku and whenua denote earth. Whenua has two literal meanings. Whenua is the land and it is also the placenta which feeds a child within the womb. Ka puta tō hua tuatahi, whakahokia tōna whenua ki te whenua<sup>14</sup>. Another word for whenua is ewe which is the derivative of ewēwe, or, blood relation. Figuratively speaking, therefore, whenua refers to the process through which Papa-tū-ā-nuku, the mother earth, inherently feeds and sustains the life of her child, humanity. The concept of whenua invokes a sense of nourishment, protection, relatedness and continuity. Te toto o te tangata, he kai; te oranga o te tangata, he whenua<sup>15</sup>.

Once in Te Ao Marama, Tane-nui-a-rangi, mastermind of Te Pō revolt, led the search for uha which the atua needed to beget human life. Papa-tū-ā-nuku, it seems, kept Hine-ahu-one hidden from Tane until the earth was ready to support te ira tangata. In his attempts to bequeath mortal life upon the world of light Tane mated with many female deities. Inadvertently, these actions produced the resources needed to sustain the elusive object of his desire. Eventually, however, Tane realised that the uha he so desperately required would only be found within a human form. He consulted his mother Papa-tū-ā-nuku who sent him to the sacred soil of her puapua. With help from his brothers, Tane used the fertile clay at Kurawaka to mold the female element. He breathed the vital essence of life into her and Hine-ahu-one was complete. The quest to complement his maleness was not successful until he entered her pubic region. In the words of Rose Pere:

“Tane felt a tremendous force from within Hine, a powerful force, such as he had never experienced before. All that Tane had sought and hoped for he found in his relationship with Hine” (1982, pg 9).

Several karakia, to bind the couple together and ensure a fruitful union, accompanied this monumental event. Hine-titama was conceived, a woman of great beauty and surpassing charm. Ko Hine-titama koe, matawai ana te whatu i te tirohanga<sup>16</sup>. In order to fully establish the uha among mortals, Tane took his unwitting daughter to wife, and several females were born. When Hine-titama discovered this truth she fled the world of light and became Hine-nui-te-pō where

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<sup>14</sup> Return your child's whenua to Papatūānuku, the whenua who is at once land and ancestor.

<sup>15</sup> We need food to survive but our sustenance comes from the land.

<sup>16</sup> You are like Hine-titama, the eye glistens when gazing upon you.

she could continue to care for her children in their after life. Tane beseeched her to return but she would not relent. As Hine-nui-te-pō, her vagina was set with obsidian teeth which killed the demi-god Maui during his precocious attempt to obtain eternal life (Kahukiwa & Grace, 1984).

In his relationship with whenua, Tane provides insight on two concepts which underpinned the experience of pregnancy and childbirth. More specifically, the story of Tane helps to explain the tapu which is associated with women and secondly his exploits provide a framework for considering female sexuality.

## Tapu

A number of publications help to clarify the concept of tapu (Durie, 1998; Henare, 1988; Law Commission, 2001; Metge, 1995; Mikaere, 1995; Pere, 1982; Szaszy, 1995). At its simplest, it seems the institution of tapu was central to the operation of an everyday system which aimed to maintain balance and confer protection upon particular aspects of Māori society. Tapu situations were off limits or unsafe and breaches of this state could have dire consequences. The actions of Hine-titama, when she discovered that her father Tane-nui-a-rangi was also her lover and the father of her children, provides a powerful example of the tapu associated with te whare tangata and the consequences which may result from any transgression. In essence, however, it seems women had specific tapu for three main reasons.

For all intents and purposes, te ira atua, the spiritual realm, is the source of tapu. In Tane, therefore, both te ira atua and the source of tapu were personified. In contrast, Hine-ahu-one, the first human being was the bearer of te ira tangata. When Tane breathed life into Hine-ahu-one the principles of te ira atua and te ira tangata combined for the first time. Hine-ahu-one was the vehicle for this event. Through Hine-ahu-one, therefore, the intrinsic tapu of all human beings is able to be conceptualised and women, as te whare tangata, provide the means through which this connection with the spiritual realm is retained. Within this context, the special role of women is acknowledged in the term atua, which is used to denote not only the gods but also the flow of menstrual blood, and the tapu of menstruation. E ahua tangata ana te paheke o te wahine, he whakatipu tangata taua mea<sup>17</sup>.

In addition, the specific tapu of women relates to their role in the establishment of whakapapa. The rationale for this tapu is twofold. On one hand,

whakapapa is in itself tapu and women share this protection because it is through their birth canal that whakapapa is carried from one generation to another. Furthermore, human beings are descended from Hine-titama, the daughter of Tane and Hine-ahu-one. Before creating Hine-ahu-one, Tane mated with numerous female deities and their offspring were the trees, plants, birds and other natural resources. Through Hine-titama, whakapapa connections between the ancestors, the deities, the land and other life forms become clear. The establishment and re-establishment of whakapapa is, thus, linked to the reproductive functions of women and such functions have the protection of tapu. Me aro ki te hā o Hine-ahu-one<sup>18</sup>.

It is clear that women were particularly tapu during pregnancy and childbirth (Makereti, 1938; Metge, 1995; Mikaere, 1995; Pere, 1982; Szaszy, 1995). This mechanism was in place for several reasons. Above all, it aimed to secure the process of successful reproduction and the likelihood of whānau/hapū survival. In effect, therefore, the tapu of pregnancy and childbirth prevented women from participating in activities which may bring harm to themselves, or their infants. In this sense, the concept of protection applied to physical and spiritual domains. Indeed, extra special precautions were taken to ensure that metaphysical aspects of infant development were not jeopardized. Ka riro mai a Rua-i-te-pukenga me te hiringa i te mahara<sup>19</sup>. Among classical Māori, the process of spiritual, cognitive and personality development begins at the moment of conception and continues throughout pregnancy. He mea hanga ki roto ki te kopu o te whaea<sup>20</sup>. Best (1929) has shown that the protocols associated tapu were most elaborate for people of high rank. As indicated by the term tamariki, however, personal status could easily change if an individual's behaviour warranted particular acknowledgement (Buck, 1949; Durie, 1998; Pere, 1982; Walker, 1990)<sup>21</sup>. Through the institution of tapu, therefore, it is likely that intellectual and spiritual capacity was nurtured in all infants, regardless of status (Makereti, 1938).

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<sup>17</sup> As in other indigenous cultures, menstrual blood is seen to be the unfertilised embryo of a human being.

<sup>18</sup> Pay heed to the life-force of women.

<sup>19</sup> Implantation of the soul, the dawn of intelligence and development of the mind and spirit occurs in pregnancy.

<sup>20</sup> Pū manawa are formed in the womb.

<sup>21</sup> Literally translated, tamariki means children but the term implies that children are the upcoming ariki, or chiefs.

## Sexual prowess

Among authors who have discussed symbolism contained within the cosmological narrative there is general agreement this series of events is representative of an awesome female sexuality (Best, 1929; Biggs, 1960; Buck, 1949; Hanson & Hanson, 1983; Mikaere, 1995; Reed, 1963). More specifically, the stories of Tane and Maui personify an incessant desire for uha and in both cases the female element, Karihi, figuratively kills its male antagonist (Buck, 1949). There is also the sense of imminent powerlessness and defeat, as Karihi draws Tiki closer and persuades him to succumb (Best, 1929; Hanson & Hanson, 1983). From the male viewpoint, this narrative seems to suggest the act of sexual intercourse is a pleasure fraught with danger (Biggs, 1960; Mikaere, 1995). In contrast, female sex organs are directly linked to the pathway through which human life and humanity enters this world and through Hine-nui-te-pō, they also provide the pathway out again. Symbolically, it is the birth canal which runs between the realms of Te Pō and Te Ao Marama. For females, therefore, the cosmological narrative describes the tremendous power of their sexuality.

Māori folklore also emanates the notion that te whare tangata is capable of miraculous, extraordinary conception (Reed, 1963). There are countless instances of movement between the celestial realms and earth-world because atua and other supernatural beings found themselves unable to resist the lure of uha, or that element which only human females contain. Tama-i-waho, for example, descended from the heavens to visit Kura-nui-a-monoa, the wife of Toi, who bore him a child. Similarly, Whanawhana, chief of the Patupaiarehe, ravished Tawhaitu on the summit of Porongia one night and all of the children she subsequently conceived to her husband, Rua-rangi, were tinged with his red hair.

In his analysis of Māori history, James Belich provides a rationale for the emergence of female sexual prowess (1996). Among neolithic Māori, it seems the division of labour by gender may not have been important given that the main issue was outright survival. Such equity, within their environment of short life-spans and high infant mortality, would have meant that males were more expendable because fewer were needed to reproduce. During this period, therefore, Māori women would have been highly prized for their sexuality and procreative capacity.

Although male ascendancy increased as Māori society evolved, iwi histories have continued to depict sexual prowess as a significant source of female mana and prestige. In the above-mentioned pātere, for example, Erenora Taratoa directly attributes her mana to her sexual organs which she personifies in her description of them as the companions with whom she traveled. Similarly, the pōtēteke performed by the sisters of Tinirau demonstrates their complete awareness that men would find an unveiled display of female genitals impossible to resist (Mikaere, 1995). In her whakapohane to Te Arawa, the Whānau-ā-Apanui rangatira Mihi Kotukutuku firmly asserted the sexual supremacy of women (Stirling, 1976). And Belich (1996) has shown that female-led versions of post-contact sex industry provided numerous opportunities for Māori women to acquire mana and contribute to the wellbeing of their whānau<sup>22</sup>.

Further tribute is paid to women who understood their own sexuality and this is linked to their ability to be proactive in the acquisition of partners (King, 1977; Mikaere, 1995; Reed, 1963). To re-claim a former lover, for example, Rangi Topeora threw her dogskin over him. Rongomai-wahine captured Kahungunu by simply expressing her desire for him even though he was already married. Under cover of both darkness and bush, Mahina-a-rangi lay in wait to seduce Turongo as he went to his sleeping place each night<sup>23</sup>. To claim the men they intended to marry, both Wairaka of Mataatua and Tiahuia, the daughter of King Tawhiao, simply slept beside them in the wharemoē. Against the wishes of her whānau, the famous puhi Hinemoa pursued Tutanekai until he could no longer refuse acquiescence in the warm bath beneath his house. And the supremacy of female sexuality is indicated by the power which women had to not only whakatapu but also whakanoa (Mikaere, 1995). In a manner unable to be accessed by men, te whare tangata gave women the capacity to traverse the spiritual boundaries of tapu and noa and, thus, provide protection for their communities.

## **Mātauranga Whakawhanau**

The following discussion considers the knowledge-base which underpinned the experience of pregnancy and childbirth among classical Māori.

<sup>22</sup> It is likely that male-dominated forms of this industry were severely exploitative.

<sup>23</sup> The only clue which Turongo had to the identity of his lover was the distinctive smell of Raukawa leaves that she used as a perfume.

This information is broadly sorted under the headings pre-conception, pregnancy, childbirth and post-partum care.

### ***Pre-conception***

Preparation for pregnancy and childbirth was clearly part of a comprehensive and ongoing process of socialisation. For example, the following verse from *He Oriori mo Tū-Tere-Moana* shows awareness of the cosmological narrative along with the most intimate details of human procreation began during the first months of life (Te Matorohanga, 1865):

Nau mai, e tama, kia mihi atu au;  
I haramai ra kōe i te kunenga mai o te tangata  
I roto i te āhuru mōwai, ka taka te pae o Huaki-pōuri;  
Ko te whare hangahanga tēnā a Tāne-nui-a-rangi  
I te one i Kurawaka, i taitaiā ai te puhi-ariki;  
Te hiringa mātua, te hiringa tipua, te hiringa tawhito rangi;  
Ka karapinepine te pūtoto ki roto te whare wahiawa;  
Ka whakawhetū tama i a ia,  
Ka riro mai a Rua i te pūkenga, a Rua i te horahora<sup>24</sup>

Everyday use of Te Reo Māori provided powerful support for concepts conveyed within the cosmological narrative. Semantically, for example, the words *tāne* and *wāhine* are derived from *Tāne-nui-a-rangi* and *Hine-ahu-one*. The word *hapū* describes not only pregnancy, or the period of infant gestation, but also a group of related *whānau* and, in this context, seems to imply the actual gestation of *whānau* or *iwi*. Similarly, the concept of *te whare tangata* describe the reproductive functions of women and the meeting house which symbolically houses *whānau* and *hapū*, or the products of multiple births. And the word *pōtiki*, which generally translates as the baby of the family, or the last born child, combines the dark and empty concept of Te Pō with the symbol of male fertility.

All forms of oral and artistic expression portrayed a convergent message (Kahukiwa & Grace, 1984; Ngata, 1928; Walker, 1990). In particular, the main symbols in *whakairo*, *raranga* and *tukutuku* were the *moko*, *tiki*, *e toru ngā ringaringa*, *koru*, *poutama* and *niho taniwha* (University of Auckland, 1988). Similarly, female dance movements like the *tīonioni* and *pōtēteke* had clearly sexual connotations and regular tilting of the pelvic basin or the characteristic swaying and rolling hips also served to assist pelvic development and flexibility during childbirth. The language which described sex, conception and procreation

was candid and openly explicit. Me aha koa i te karere putuputu, a te ure, tona?<sup>25</sup> (Karetu, 1995).

The development of cognitive processes which helped women to prepare for childbirth were a natural part of whānau/hapū lifestyle. Kua moe rāua generally indicated marriage no matter when, or where, it was discovered (Makereti, 1938). Little attention was paid to pre-pubescent nudity and nudity among adults was a medium for expression (Best, 1929; Buck, 1945, 1949; Reed, 1963). The forces of nature and items of the inanimate world were endowed with gender, passion and the capacity to reproduce. Participation and exposure to numerous fertility rites and practices ensured an early and constant awareness of issues associated with procreation. Te Huahana-a-Pou, Te Horomanga-a-Pou, Te Puta-tieke and Uenuku-tu-whatu are a few of the many symbols or tūāhu which were imbued with the power to cause conception (Best, 1929; Reed, 1963). Places and people were often named and/or re-named to venerate the importance of te whare tangata. For example, the place where Moe-te-ao gave birth to twins was named Ngā Mahanga-a-Moe-te-ao and Te Iho-o-Kataka is the famous hinau tree which houses the sacred iho of Kataka and, thus, has the power to cause conception (Best, 1929).

Within each hapū, general knowledge of the various techniques which could promote, or prevent, conception was evident. With regard to menstruation, for example, there was the belief that copulation during or immediately following the koero period would probably be fruitful (Best 1906). Women who wanted to conceive could take rongoa and aphrodisiacs or piki whenua, carry a whakapakoko, wear a hei-tiki, have coitus in a special place and/or seek the beneficence of a fertility symbol (Best, 1929; Brooker & Cooper, 1960; Brooker et al, 1987; Makereti, 1938; Te Matorohanga, 1865). In an illustrious marriage, the newly weds may receive whakato tamariki or ohaoha rites in a bid to promote fertility (Best, 1929; University of Auckland, 1988).

Women were very careful to avoid situations which may cause them to become pukupā and male impotence was also known (Best, 1929; Binney & Chaplain, 1996; Makereti, 1938). However, whakapa, kokoti-uru and tuapa rites along with a range of other techniques were used to prevent conception and/or

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<sup>24</sup> A lullaby which celebrates sexuality, conception, growth and development both within and outside the maternal womb.

<sup>25</sup> What can be done about the persistent urges of the penis and the vulva?



invoke sterility. Heni Brown, for instance, describes how Te Kooti bound her great-grandmother's womb by drying her whenua over a fire before burying it (Binney & Chaplain, 1996). Similarly, Makereti explains how the kotiate could sever part of the scrotal sac and trigger a process of atrophy which would render the unfortunate male impotent and sterile (1938). In the case of an unwanted pregnancy, the techniques for mate-roto included pressure to the abdomen, amniotomy, herbal remedies, breaking a tapu, infanticide and even maternal suicide (Brooker & Cooper, 1960; Brooker et al, 1987; Coney, 1993; Gluckman, 1972, 1981; Hooker, 1869; Metge, 1967; Orbell, 1978).

Within an everyday context, young women observed and participated in the pregnancy and childbirth experiences of other women. These women were the role models for childbirth-related behaviour and attitude. By early adolescence and their first pregnancy, young women would have had a clear idea of what to expect, where to go to receive support and an awareness of what to do. Cognitively, it is reasonable to suggest this support system provided confidence and a range of coping strategies. Moreover, the experiences of menarche, conception, childbirth and menopause were rites of passage to womanhood and the source of mana wāhine.

### ***Pregnancy***

Hori Ropiha, and others, have claimed that Māori women were wise in matters of childbirth (Binney & Chaplin, 1996; Makereti, 1938; Ropiha, 1893). Indeed the available literature suggests the process of preparation during pregnancy involved a comprehensive system of psychological and physiological components. Other signs may have been evident but, pāpuni, or the absence of menses, generally confirmed pregnancy. The concept of rapou implies a particular support system came into play for women in their first pregnancy although this system may have been elaborate for women of high rank (Best, 1906; Makereti, 1938). Irrespective of rank or parity, however, ngā wāhine hapū would have been able to take advantage of at least three sources of knowledge. The first relates to the process of psychological preparation, the second addresses clinical care during pregnancy and the third concerns practical aspects of preparation for childbirth.

Psychologically, it has already been shown that preparation for pregnancy and childbirth began during the first months of life. This process was clearly influenced by concepts contained within cosmogony, folklore and everyday

aspects of whānau lifestyle. For pregnant women, it seems these sources of knowledge conveyed three main messages. In the first instance, ngā wāhine hapū would have been cognizant of the relationship between te whare tangata and mana wāhine. Furthermore, the concept of tapu, or the need to protect important aspects of infant development, would have been conveyed. Indeed, specific terms were used to distinguish the various stages of pregnancy and, thus, draw attention to the importance of processes associated with, for instance, the implantation of wairua and intelligence as well as the development of pū manawa (Barlow, 1991; Szaszy, 1995; Te Matorohanga, 1865). The notion of kumama suggests the needs of an unborn child were paramount.

And thirdly, the knowledge-base which informed ngā wāhine hapū clearly contained a number of strategies for coping with childbirth. For example, it has already been shown the world-view of classical Māori was firmly oriented towards the group. Hence, ngā wāhine hapū would have had a pool of potential support to draw upon if desired and there are certainly examples of this happening (Best, 1929; Binney & Chaplin, 1996; Reed, 1963; Stirling, 1976)<sup>26</sup>. In addition, this knowledge-base conveyed the message that childbirth is not to be feared. Indeed, the concept of rauru implies the mothers of humanity will provide spiritual strength during the hardship of labour and this period will be followed by immense joy<sup>27</sup>. Similarly, the word whakamamae suggests the labour of childbirth is the process through which ngā wāhine hapū are set free.

Even the narratives about negative childbirth experiences seemed to be a form of coping strategy for pregnant women. In the story of Maui-tikitiki-a-Taranga, a difficult birth is associated with a positive outcome (Kahukiwa & Grace, 1984; Reed, 1963). Successful labour and delivery is linked to the right spiritual and physical environment (Best, 1929; Binney & Chaplin, 1996; Stirling, 1976). Provided the right protocol was followed, the much-feared stillbirth did not cause a problem (Best, 1929; Reed, 1963). And the pregnant mother was assured her child will be cared for no-matter what happens, ka ropetia te tamaiti (Belich, 1996; Te Matorohanga, 1865). Various authors have shown that classical Māori seldom experienced problems during parturition and there was an underlying assumption that women have an inherent ability to cope with this event (Belich,

<sup>26</sup> In modern terms, such support would have comprised emotional, tangible and information resources.

<sup>27</sup> The concept of rauru has already been explained.

1996; Best, 1906; Gluckman, 1976; Makereti, 1938; Ropiha, 1893; Thomson, 1859). Childbirth, therefore, was neither an ordeal nor a matter to worry over (Best, 1929; Binney & Chaplin, 1996; Makereti, 1938).

Although ngā wāhine hapū generally lived a normal life up to a few days before confinement, there were procedures for clinical care. Typically, the woman's own mother, grandmother and/or other female relatives were the providers of such care (Makereti, 1938). He puta taua ki te tāne, he whānau tama ki te wāhine<sup>28</sup>. The system of clinical care seemed to have five main components (Barlow, 1991; Best, 1906; 1929; Binney & Chaplin, 1996; Brooker et al, 1987; Gluckman, 1976; Makereti, 1938; Stirling, 1976; Te Matorohanga, 1865; Williams, 1996). Firstly, there were procedures associated with the confirmation of pregnancy such as pāpuni, checking for skin discolouration on the breast or abdomen and uterus size. In addition, there were techniques for estimating gestation and the lunar date of delivery<sup>29</sup>. Thirdly, there were procedures for monitoring the woman's wellbeing during the various stages of pregnancy including ngā korero ki te pēpi ki roto. Fourthly, it is clear that mirimiri was an important component of care and various techniques were used to prepare the breasts, estimate gestation and check infant position<sup>30</sup>. The fifth aspect of care involved the use of rongoa as, for example, a source of iron, to relieve morning sickness or constipation and for haemorrhoids. The providers of prenatal clinical care were particularly skilled in detecting the signs of imminent labour such as wheiao, whakamamae, kouawai or ara.

Pregnancy was the time during which women and their whānau would make practical preparations for childbirth. Although preparations were more elaborate for rapou women of high status, a number of items were required for all births and these were probably prepared during late pregnancy. Firstly, there was the need to prepare something to give birth on. This may have been an old garment or kahu, in an emergency, but a specially prepared whāriki or kaokao is more likely given the need to protect spiritual welfare and the scarcity of clothes<sup>31</sup>. The whenua and other products of childbirth, such as parapara or meconium, were

<sup>28</sup> Men excel in war but women are best in childbirth.

<sup>29</sup> Based on the size of the uterus and/or the position of the moon, stars and tide.

<sup>30</sup> If birth practices among other indigenous cultures are anything to go by, it is likely that Māori developed techniques for external version of a breech presentation or malpositioned baby (Jordan, 1978).

<sup>31</sup> As in the case of menstrual blood or a still-born fetus, the by-products of childbirth may become an atua kahu if appropriate protocols are not followed.

probably wrapped inside the whāriki and may have been placed in a kete or container made specifically for this purpose. In addition, there was the need to prepare an implement for waituhitanga<sup>32</sup>. This item may have been kept within the whānau for generations. Once cut, a thin strip of muka-type fibre, which had been scraped smooth and kept pliable, was needed to tie the iho, or umbilical cord<sup>33</sup>. The iho would be stored in a container, such as tahā koukou or wrapped in a piece of bark or material. Rito water may be needed to wash the infant along with a quantity of titoki seed oil, or something similar, to treat the pito, massage the newborn or the poho to assist expulsion of the whenua. The pito was generally covered with a bandage made from the inner bark of, for example, the lacebark tree. It was generally cleaned daily with a sponge made from the scraped tow of particular plants. The infant may be wrapped in warm raurēkau, mangeao or patete leaves which would need to be collected beforehand. A garment, or whāriki, would also be needed to keep the infant warm and a supply of angiangi moss, or something similar, would have been needed for sanitary pads and nappies. In addition, the mother or whānau may have made a parakaraka, or swinging cradle, from various types of forest creeper.

Because of its tapu, childbirth always took place away from the kainga. In some instances a whare kōhanga may have been built specifically for this purpose. Perhaps a whare kahukahu was used for the birth itself and the whare kōhanga provided a temporary dwelling until certain protocols had been completed. A smokeless fire, made from kahikatea bark and charcoal, may have warmed the place of birth and a separate area for cooking may have been created. And finally, it seems labour posts were used to assist childbirth. To prepare such turuturu, or pae whakaruru, which comprised a horizontal post strapped to two vertical posts, three saplings were cleaned and made smooth. Among some iwi, one post was named pou-tama-tāne while the other was called pou-tama-wāhine.

### **Childbirth**

The story of Tura, who taught his Patupaiarehe wife how to use the pae whakaruru, shows that men had the knowledge and capacity to be midwives (Gluckman, 1976; Reed, 1963). A ka kitea te ngawari o tāua wahine i tikina, a ka

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<sup>32</sup> Often a piece of shell or obsidian with a keen edge that had been ground on sandstone.

<sup>33</sup> Prior to use this may have been soaked in oil which had been extracted from, for example, the seed of the titoko tree.

whānau te wahine ra. Ko te mea pai ma te wāhine e whakawhānau<sup>34</sup>. Within the whānau, however, mothers and grandmothers made the best kai whakawhānau or tapuhi and some women may have specifically trained for this purpose. During childbirth, the attendants had a number of tasks (Best, 1929; Binney & Chaplin, 1996; Brooker et al, 1987; Coney, 1993; Edwards, 1990, 1992; personal communications with Riria Harrison, Mona Potae, Kate Te Moananui and Rebecca Turner in Hauraki, 1981-1994; personal communications with participants at Hui Wāhine Māori in Thames, 1989; Reed, 1963; Te Matorohanga, 1865; Williams, 1996).

Among classical Māori, the length of labour was very clearly associated with the likelihood of complications. For rapou women, it seems normal labour, rauru nui, was expected to last up to six days and, in accordance with the concept of Te Pō, this period was seen to comprise stages of latency, acceleration and transition. The term hokai rauru nui represented an extended first phase. When this occurred during the lunar periods of rakaunui, whiro or tangaroa, the birthing woman may have been conveyed to a tūāhu for extra strength, protection and encouragement. A labour of nine to ten days, hokai rauru whiwhia, was a clear sign of trouble, possibly twins or a breech delivery. If labour lasted ten days or more, hokai rauru maruaitu, it was a very ill omen and the position of the moon was used to help determine the chances of survival.

In Tuhoe, the following karakia was used to give a woman courage and spiritual strength during childbirth (Te Matorohanga, 1865):

Haramai, e hine!  
 I te maruaroa, whakaputa i a kōe ki taiao  
 Ki te ara o tō tīpuna, o Hine-titama  
 I takahia ai tapuwae nuku, tapuwae rangi,  
 tapuwae ki Tiriti-o-Matangi hauroa  
 Whaia tō tapuwae, ko te tapuwae o tō tīpuna o Hine-hau-one  
 Ka takoto ai i roto i a hui-te-rangiora,  
 Whakaputa i a koe, e hine, ki te aotūroa<sup>35</sup>

However, ngā tapuhi had a repertoire of strategies to create a positive environment and help the birthing mother cope with labour and delivery.

In addition to basic care, such as the provision of fluids, food, warmth and rest, the tapuhi had a particular style of birth talk which may have included stories

<sup>34</sup> Women make the best midwives because they do not forget what it is like to give birth.

<sup>35</sup> Follow the path of Hine-titama, tread the footsteps of movement, footsteps in tune, footsteps to success, proceed in the footsteps of Hine-hau-one, find a way to come back to us.

about other births, songs, laughter and even scolding if considered appropriate. Mirimiri, ambulation and, in thermal areas, warm baths may also have been used. In the case of a whakatina, whakapapa may be recited, rongoa may be administered, the woman may be conveyed to a tūāhu, the infant may receive a karakia or the tapuhi themselves may be changed<sup>36</sup>. As a means of encouragement and support, events associated with labour and delivery provided the basis for ongoing predictions about the child's talents or attributes. For example, a child born in rauru nui would be healthy and robust but one who survived rauru whiwhia would surely be a warrior.

It is clear that women would never lie down in labour. Towards transition, she would sit in squatting position, limbs apart with the whāriki ready to receive her child. She would hold the pae whakaruru, or rest her breast upon the knees of an attendant. During a strong contraction, she would press her abdomen against the pae whakaruru or the knees of her tapuhi to help push the baby downward. Some iwi may have had particular techniques for dealing with a breech or malpositioned delivery. However, all tapuhi knew the signs of an imminent birth<sup>37</sup>.

Upon delivery, the infant was held head down to loosen the nanu. Any remaining secretions may be extracted by the tapuhi who would place her mouth over the infant's airways and take a deep inward breath. The iho would be tied at konui, or koiti, before being cut and stored<sup>38</sup>. The pito may be treated and bandaged and the infant washed, oiled and wrapped. Massage, morenga o te poho and rongoa made from, for example, ponga or raupo may have been used to help the whenua come away<sup>39</sup>. The whenua would then be checked to be make sure it was complete. Ngā tapuhi knew that rauru motu, or retained placenta, was a sign of grave maternal danger. Massage and rongoa were also used to ensure an abundant milk supply and to treat haemorrhaging or inflamed breasts. To soothe a painful birth passage, women sometimes squatted over vapour baths or steam ovens made with rongoa. From all accounts, however, women did not tear during childbirth.

<sup>36</sup> Mangeao, nikau and tataramoa were known to speed uterine contractions and ease childbirth.

<sup>37</sup> Such as trembling legs, blood spotting, bulging waters and a baby being born in the very center of pain.

<sup>38</sup> To avoid an unsightly stump, the measure for cutting the iho was the first thumb joint or length of the little finger.

<sup>39</sup> The mother would lie in shallow river or stream and her poho would be massaged in a downward motion by the bare foot of her tapuhi, first one foot then the other, till the whenua and all parapara had come away.

### ***Postpartum Care***

Postpartum care included both physical and spiritual components. The physical aspects of maternal and infant care primarily comprised a range of techniques to look after the pito and whakawaiu. Infant massage, however, was an important part of postpartum care and various techniques were employed<sup>40</sup>. While the infant was suckling, there may have been a tapu on sexual intercourse and in some instances this may have lasted for up to two years as a means for spacing childbirth (Metge, 1967). In contrast, considerable weight was placed on the spiritual components of postpartum care.

Although there is confusion over the order in which ceremonies took place during this period, it is clear that various rituals were used to celebrate childbirth and these were particularly elaborate for rangatira (Best, 1929; Makereti, 1938; Mikaere, 1995; Reed, 1963). In general, there were protocols for naming and protecting the child, the endowment of desirable attributes and the removal of tapu. Among some iwi, for example, the tua rite would take place when the infant's iho had fallen off and may have involved the establishment of a tuapa tamariki to preserve the child's health and vigour. As part of the process for removal of tapu, the whare kōhanga and other buildings associated with the place of birth would be burned so the ashes could be gathered and buried. In addition, there were protocols for returning the whenua to Papa-tū-ā-nuku and disposing of the iho. These would be buried or hidden in wāhi tapu, often a boundary line marking land to which the child was affiliated or a site used specifically for this purpose. In some instances, the sites were decorated and became a mauri, or a symbol of whānau/hapū vitality.

### **Te Ao Hurihuri**

By 1900 the foundations for a national maternity care system were well underway in this country and by 1935, eighty percent of all births to Pākehā women took place in a maternity hospital. It took another three decades for Māori to achieve this level of participation in hospitalised childbirth but by mid-1960 experience of mātauranga whakawhānau among Māori appeared obsolete. The following discussion briefly examines the circumstances which led Māori to believe that a hospitalised system of maternity care may be beneficial. It also aims to provide an understanding of the obstacles that prevented Māori participation in

this system and the factors which eventually made way for complete acceptance of hospitalised procedures.

### ***The lure of hospitalised childbirth***

A number of authors have shown the dissolution of classical Māori society began immediately after contact with Pākehā (Belich, 1996; Durie, 1998; Elsemore, 1989; Metge, 1967; Pool, 1991; Simpson, 1979). An initial enthusiasm to embrace the new ideas and technologies which Western society offered was progressively displaced by experience of depopulation, disease and dispossession (Durie, 1998).

In the first century post-contact, established patterns of settlement and lifestyle underwent significant change. Gardener-gatherer subsistence communities rapidly transformed into economies for barter and exchange. Living conditions critically deteriorated as whole communities voluntarily relocated or were forcibly dislocated through inter-tribal warfare and the rampant rampages of an ever-menacing musket. New diseases and waves of epidemics swept through the heart of whānau and hapū. In little more than four decades, the Māori population halved.

After signing the Treaty of Waitangi in 1840, swamping tides of British settlers became the most dreadful enemy (Beaglehole & Beaglehole, 1946; King, 1977; Orange, 1987; Scott, 1975; Simpson, 1979; Walker, 1990). In the worst possible land-grab imaginable and in the span of single life-time, Māori saw their estates of more than sixty-six million acres reduce to a million hectares, a mere sixteenth of their entitlement. According to Belich:

“Māori bent under the weight of Europe, eventually to the point where the Pākehā state was able to pass a rope over the Māori tree and kept it bent and politically subordinate” (1996, pg 270)

Although election of the three Te Aute College old boys - Apirana Ngata, Maui Pomare and Peter Buck - as Māori members of parliament for the Liberal Government during the early 1900s was a turning-point politically, the workload which faced this trio was formidable. Collectively, the Māori psyche was in a shocking state of anomie and in desperate need of repair (Webster, 1979). Most communities had been relentlessly ransacked by poor living conditions, starvation,

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<sup>40</sup>Romiromi, takahi, toanga and toto are techniques for infant massage.



poverty and disease. Mortality was exorbitant and life-expectancy short, at less than thirty years (Pool, 1991).

In terms of *te whare tangata*, the Te Aute trio were fully aware the processes of depopulation, disease and dispossession had introduced a range of issues which needed to be addressed. Although epidemiological data was not available at the time, Māori maternal and infant health showed signs of appalling status. Indeed, staggering evidence of sterility among Māori women had been mounting for many years (Bell, 1890; Best, 1906; Gluckman, 1976). This was clearly linked to social causes, namely the sexually transmitted diseases gonorrhea and syphilis as well as poor social conditions. Retrospective estimates for the years 1890-1910 have shown that sterility may have affected one in two urban Māori women and one in four nationally (Prior, 1968). Remaining Māori women, at the main ages of reproduction, displayed a high fertility rate, at five to seven births per woman, and much higher rates were evident in areas that had not experienced land confiscation or urbanisation (Pool & Pole, 1987; Pool 1991). Nevertheless, infant mortality was horrendously high, with one in four babies dying during their first year of life (Binney & Chaplin, 1996; Makereti, 1938; Pool, 1991). Among Māori women, several authors lamented excessive and increasing rates of pre-eclampsia, post-partum haemorrhage and maternal death during childbirth (Best, 1929; Donley, 1986; Gluckman, 1976; Makereti, 1938; Mein-Smith, 1986; Ropiha, 1893)<sup>41</sup>. For many women, it seems lactation was also difficult to establish (Makereti, 1938).

In addition to the above, christianity had waged a particular battle against the cosmological narrative and value system which underpinned *mana wāhine* and concepts associated with *te whare tangata* (Law Commission, 1999; Mikaere, 1995). For example, christian ideas about marriage and illegitimacy, along with an influx of white female settlers, had increasingly debased the role of Māori wives who had previously been able to act as effective mediators in cross-cultural relations (Belich, 1996). At the same time, Pākehā men were known to exploit the procedures associated with Māori marriage in order to secure ownership of the woman's entitlement to land (Edwards, 1990, 1992). And Māori women had vast experience of molestation and rape by Pākehā men (Belich, 1996; Edwards, 1990,

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<sup>41</sup> The 1937 Committee of Inquiry into Maternity Services suggested the incidence of childbirth complications among Māori women was remarkably low (Mein-Smith 1986).

1992; Scott, 1975; Simpson, 1979). It would seem the anomie of Māori women, during this era, may have been linked to the marginalisation of mana wāhine and te whare tangata within the dominant Pākehā society.

To combat such issues, the Māori members of parliament adopted a two-pronged strategy (Durie, 1998). On one hand, they utilised local Māori leadership to elicit Māori co-operation, mobilise an effective workforce and establish community-based health initiatives. On the other hand, they fiercely advocated complete acceptance of Pākehā knowledge in hygiene, sanitation and medicine. The trio clearly wanted Māori to participate in the campaigns for safer childbirth. Over the years, such campaigns led to the prohibition of untrained birth attendants, the establishment of hospitalised childbirth and systems for ante and postnatal care (Mein-Smith, 1986).

### ***Obstacles to Māori participation in hospitalised childbirth***

Broadly speaking, two main obstacles prevented Māori participation in the various initiatives for safer childbirth. The first stemmed from the government's position in relation to the provision of health services for Māori and the control of maternity services. The second obstacle was due to the attitudes of Māori themselves and the accessibility of maternity services.

Surely, the Māori MPs were stunned when they realized the depth of eugenic ideologies which underpinned Government's health policies. According to Dr JS Elliott, who headed the Health Department in the early 1900s:

“It has rightly been decided that this should be not only a white man's country, but as completely British as possible. We ought to make every effort to keep the stock sturdy and strong, as well as racially pure” (cited in Mein-Smith, 1986, p25).

Similarly, Dr Truby King, founder of the government-funded Plunket Society which provided maternal and child health services from conception to adolescence, claimed:

“If we lack noble mothers we lack the first element of racial success and national greatness and ... the physical and moral betterment of the race” (Dr Truby King, 1925, p153).

The maternity reforms, therefore, were inherently racist and the emphasis was on rearing a healthy British population. To the Māori MPs it seemed money was cheap and available for any purpose except the rehabilitation of Māori (King, 1977). Even when a subsidy scheme was established, most general practitioners

did not want to attend Māori women during childbirth ostensibly because of the inconvenience of travel to rural areas, the likelihood of complications and inadequate remuneration (Edwards, 1990, 1992; Mein-Smith, 1996).

In 1932, however, the government passed a Health Act which made District Health Boards responsible for the provision of maternity services for the “indigent” (Donley, 1986). For Māori, this represented the first formal acknowledgment of their maternity needs and an invitation to participate in the national system of care. Nonetheless, it quickly became clear that Pākehā women, in general, did not want to share their maternity facilities with Māori. In 1937, the Committee of Inquiry into Maternity Services found that Pākehā women were prepared to travel great distances to avoid confinement in the same maternity unit as Māori. In an effort to alleviate such inconvenience, the Committee recommended the establishment of special wards for the isolation of Māori in public maternity hospitals. They felt the special wards would allow the “natives” to access skilled birth attendants and provide the opportunity for them to learn more civilized methods of childbirth (Donley, 1986).

It is possible the issue of Māori childbirth might have received attention sooner if Government had not been preoccupied with a lengthy power struggle over the structure of maternity services. In brief, the Health Department and Government objected to the rise of general practitioner/obstetricians with their so-called “meddlesome midwifery” and emphasis on hospital delivery (Mein-Smith, 1986, pg 39). On one hand, the Government wanted midwives and the midwife-operated St Helen’s hospitals to be the main providers of maternity care. They argued childbirth was a normal process for the vast majority of women. On the other hand, the Obstetric Society, claimed childbirth was a pathological condition and a surgical operation which required the attendance of at least one doctor (Mein-Smith, 1986). They advocated the replacement of midwives with obstetric nurses, hospital birth and compulsory doctor attendance. The controversy came to a head with appointment of the 1937 Committee of Inquiry into Maternity Services. As already mentioned the Committee firmly supported hospitalised childbirth in the hands of doctors and obstetric nurses. Midwives were on the down-hill slide (Donley, 1986). At the end of the day, it was the Pākehā mothers who resolved this dispute with their demands for effective pain-relief during childbirth and their desire for two-weeks rest in a postpartum maternity facility.

For all intents and purposes, Māori participation in the national maternity system was encouraged by Government policy, financial incentives and endorsement within Māoridom itself<sup>42</sup>. Māori women themselves, however, were reluctant to take up this offer.

In many regions, it is clear that Māori were satisfied with the systems they had developed to cope with pregnancy and childbirth (Binney & Chaplin, 1996; Coney, 1993; Donley, 1986; Makereti, 1938; Penfold, 1972; Stirling, 1976; personal communications with Riria Harrison, Mona Potae, Kate Te Moananui and Becky Turner in Harataunga during 1981-1994). Indeed, Māori seemed to flourish in physically remote areas when leadership and land was retained (King, 1977; Simpson, 1979; Webster, 1979). In comparison with their urban counterparts, the birthrate among isolated Māori was much higher at ten to twenty births per woman (Binney & Chaplin, 1996; Edwards, 1990, 1992; Makereti, 1931; Pool, 1991; Ritchie, 1957; Stirling, 1976; personal communications with Riria Harrison, Mona Potae, Kate Te Moananui and Becky Turner in Hauraki during 1981-1994). Although husbands and fathers were often midwives and the pae whakaruru had largely been replaced by apple boxes, Māori undoubtedly retained a system of mātauranga whakawhānau and felt able to handle all aspects except a difficult afterbirth or heavy postpartum bleeding (Beaglehole & Beaglehole, 1946; Binney & Chaplin, 1996; Coney, 1993; Donley, 1986; Edwards, 1990; Makereti, 1931; Stirling, 1976). In the back blocks, district nurses and school-teachers were an integral source of support for Māori childbirth systems and they would often dispense medicines or provide transport if the need arose (Binney & Chaplin, 1996; Coney, 1993; Donley, 1986; personal communications with Riria Harrison, Mona Potae, Kate Te Moananui and Becky Turner in Hauraki during 1981-1994).

A number of sources have shown that the concept of a hospital birth was often abhorrent for Māori women and identified strategies which were used to avoid this experience (Coney, 1990; King, 1977; Edwards, 1990, 1992; Makereti, 1938; Stirling, 1976). As late as 1967, for example, Dr Smith of Rawene Hospital reported that Māori women would simply forget their due dates, delay coming to the maternity hospital or even come in during labour only to duck into the nearby scrub with a towel when delivery was imminent (Donley, 1986).

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<sup>42</sup> In 1924 the Government had introduced a ten pound maternity subsidy to help with costs of doctors fees.

Such reluctance has been attributed to a number of factors (Beaglehole and Beaglehole, 1946; Coney, 1993; Donley, 1986; King, 1977; Penfold, 1972). In particular, the strangeness of hospital staff and prohibition of whānau support, feelings of cultural insensitivity, enforcement of the lithotomy position, being told when to push, separation from infants, giving birth in a place where people die, the burning of whenua, disrespect for spiritual health, the desecration of tapu and the likelihood of puerperal sepsis<sup>43</sup>. Furthermore, women had to overcome barriers of distance, expense, transportation, communication and concern for children left at home. In all aspects of New Zealand society, this generation of Māori had horrendous experience of Pākehā prejudice (Hunn, 1961; Edwards, 1990; Schwimmer, 1968). And they were not oblivious to the remuneration concerns of doctors or the prejudice of their Pākehā counterparts (Edwards, 1990, 1992). Within the maternity hospitals, Māori women were seen to be passive and sullen receivers of medicalised childbirth who were fast losing confidence in their own customs (Donley, 1986).

### ***Māori acceptance of hospitalised childbirth***

Although it took several decades, Māori did accept hospitalised childbirth procedures and a number of factors clearly contributed to this position. Through a series of legislative moves, the Government made it increasingly difficult for Māori to continue mātauranga whakawhānau techniques even in isolated areas. In addition to legislative pressure, Māori were under considerable social pressure to participate in the hospital-based maternity system.

Initially, it seems legislation simply outlawed the use of traditional childbirth techniques but in later years it moved towards the provision of financial incentives or rewards for participation in the national system. For example, the Midwives Registration Act of 1904 signaled the Government's intention to restrict the role of lay midwives, or birth attendants, who were not registered to practice as midwives. Although it was difficult to enforce in rural areas, this Act directly undermined the role of tapuhi. Similarly, the 1907 Tohunga Suppression Act pushed traditional Māori healers underground and the 1909 Native Health Act made it illegal for Māori women to breastfeed in public. During the 1924 Campaign for Safe Maternity, the Government introduced legislation to

<sup>43</sup> The 1924 Campaign for Safe Maternity clearly showed that New Zealand's high maternal mortality rate was primarily the result of puerperal sepsis caused by the lack of adequate aseptic techniques in maternity

completely eliminate untrained midwives (Donley, 1986). Prosecutions against those who continued to practice increased considerably and funding for the public health nurse maternity service was withdrawn.

It seems the Labour Government of 1935 genuinely believed that access to good quality maternity care was the right of all women, not just those who happened to be white and wealthy. Hence, the 1935 Health Act paved the way for Māori participation in hospitalised childbirth systems and the 1938 Social Security Act heralded a trail-blazing shift towards free maternity care. In 1939, a maternity benefit was introduced to provide economic assistance and an incentive for women to seek medical care. In 1963, however, the Government introduced legislation which linked birth registration to eligibility for the family benefit. For Māori, it seems this move removed the last vestiges of resistance to hospital childbirth<sup>44</sup>.

During the nineteen sixties, Māori underwent dramatic social change and were under tremendous social pressure to accept European ways which included hospitalised childbirth. Māori leadership and Māoridom, in general, wanted to have a good relationship with Government. This was an era of co-operation, collaboration and assimilation (Durie, 1998; Elsemore, 1989; Ritchie & Ritchie, 1968; Walker, 1990). Intermarriage increased significantly as Māori moved into the cities to embrace new opportunities for housing, employment and education. By 1961, approximately forty percent of the Māori population lived in urban areas and by 1963, ninety-five percent of all Māori births took place in a maternity hospital.

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hospitals.

<sup>44</sup> Māori were dependant on the family benefit, which was often the sole source of income, and birth registration was a procedure which staff at maternity hospitals had to complete.

## **Chapter Two**

# **Te Ao Hurihuri**

### *New Zealand's Maternity System*

Although Māori participation in the national maternity system was not achieved until the 1960s, systems for hospitalised childbirth were well established by the 1930s throughout the western world. A large body of literature has shown that the logic which has underpinned establishment of hospital-based maternity systems is fraught with anomaly (Arms, 1975; Boyars, 1984; Brook, 1986; Dick-Read, 1942; Donley, 1986; Edwards & Waldorf, 1984; Greer, 1984; Haire & Haire, 1972; Illich, 1976; Kitzinger, 1972, 1979, 1991; Kitzinger & Davis, 1978; Lumley, 1980; Mein-Smith, 1986; Oakley, 1980, 1984, 1986, 1993; Oakley & Houd, 1990; Odent, 1976; Pryor, 1963; Rich, 1977; Tew, 1988, 1990, 1998). The following chapter has two main objectives. In the first instance, it provides a chronological overview of factors which influenced the establishment and development of New Zealand's maternity system until the early 1990s when the data for this thesis was collected. Such development was clearly influenced by a range of international and national pressures but this period has been generally characterized by the rise and fall of obstetricians, advances in scientific knowledge and technology and consumer demand for woman-centered practices (Donley, 1986; Mein-Smith, 1986; Tew, 1990, 1998). Furthermore, this chapter describes a number of socio-political issues which particularly impacted on the delivery of maternity services for Māori when this research took place (Durie, 1989, 1994, 1995a, 1998).

#### **1990 to the 1940s**

At the turn of the last century, maternity care was largely the domain of the Education Department's Child Welfare Division under Dr Truby King (Olssen, 1981). Hundreds of independent maternity homes provided childbirth services throughout the country (Donley, 1986; Mein-Smith, 1986). During the ensuing decades, a national system of hospital based maternity care was established. The main factors which characterized developments during this period were:

- A Health Department commitment to development of a national maternity system and facilities for training midwives, eg establishment of a nation-wide chain of St Helen's maternity hospitals to provide midwife-based maternity care and training facilities, massive expansion in outpatient antenatal facilities, the introduction of postnatal care and mothercraft services (Mein-Smith, 1986);
- Legislation to remove the autonomy of domiciliary midwives, introduce procedures for midwifery training and registration, develop midwifery standards and promote the concept of an obstetric nurse, eg the 1904 Midwives Registration Act, 1925 Nurses & Midwives Registration Act and 1938 Social Security Act which provided free maternity care for women under the care of a doctor but not a midwife (Donley, 1986; Mein-Smith, 1986).
- Formation of the Obstetric Society and allied initiatives to gain control of maternity services, eg the St Helens chain became a training facility for obstetricians, numerous power struggles between the Health Department and obstetricians, surgeons and obstetricians, general practitioners and obstetricians, midwives and obstetricians (Mein-Smith, 1986);
- Rigid hospital protocols during labour and delivery; lithotomy position; H.Mt.20 aseptic techniques; extensive experimentation with drug therapies for anxiety and pain-relief; development of techniques for intravenous induction, inhalational analgesia, epidural, paracervical or total spinal anaesthesia; ecobolic agents; blood transfusion and antibiotic treatments for infection (Donley, 1986);
- Mothercraft services provided by the Plunket Society, four-hourly infant care regimes, bottle-feeding and hands-off infant care (Olssen, 1981; Ritchie & Ritchie, 1970).

Concern over the quality of childbirth experience, during this period, brought movement towards natural childbirth ideologies and the emergence of psychological theories on childbirth trauma, a maternal fear-tension-pain syndrome and psychoprophylactic disassociation (Bowlby, 1940; Deutsch, 1940; Dick-Read, 1942; Freud, 1936; Lamaze, 1933 cited in Wright, 1964; Rank, 1929).

### **The fifties and sixties**

The fifties and sixties brought renewed attempts to curtail the role of midwives and bring maternity services under the control of obstetricians. In 1957 direct-entry midwifery training was abolished. Women wanting to train as midwives, henceforth, had to first train as a general nurse, which included an obstetrics component, as a pre-requisite for admission to the St Helen's midwifery



programme. Furthermore, the National Women's Maternity Hospital and Clinical School for Obstetrics and Gynaecology opened in 1963. This provided postgraduate facilities and independent access to clinical material. National Women's had firm links to the universities, medical schools and health department. This, therefore, was the final step needed to ensure that obstetricians were included in the power-base for decision-making on the delivery of maternity services nationally (Donley, 1986; Mein-Smith, 1986).

The scientific community, during this era, largely turned their attention to the side-effects of medicalised childbirth procedures, the development of techniques for assessment of foetal wellbeing and the routine management of third stage labour. Research concentrated on identifying optimum dosage schedules, variation in drug effects and indicators of a toxic reaction (Moir, 1973).

Among childbearing women themselves, knowledge of alternative birth techniques and the call to resist obstetric technology was mounting (Bibring, 1959; Bowlby, 1952, 1960; Davis, 1951; Frisbie, 1960; Harlow, 1959; Hazell, 1969; Laing, 1967, 1969; Lamaze, 1958; Lorenz, 1967; Wright, 1964). In New Zealand, three initiatives held particular significance. The Natural Childbirth Group and La Leche League were established during this period (Donley, 1986). Furthermore, Professor Harvey Carey, Chair of the New Zealand Obstetrics and Gynaecology School, prompted his own demise in the establishment of a controlled trial which found that natural childbirth techniques could reduce the use of obstetric technology in labour and improve perinatal outcomes (Carey, 1957).

## **The seventies and eighties**

Although the seventies brought vigorous efforts to curtail the autonomy of midwives, this era was also one of international revolt against an obstetricians' monopoly and the unjustified use of obstetric technology. A range of themes were, therefore, evident in New Zealand. On one hand, for example, this period brought:

- strategies to facilitate acceptance of obstetric ideologies and disempower midwife decision-making bodies, eg phasing out the St Helen's midwifery programme in favour of a ten week postgraduate nursing diploma in Maternal and Infant Health with Midwifery; removal of the Nurses and Midwives Board power to determine midwifery curriculum, approve midwifery training facilities and oversee midwife graduation processes; general practitioners without postgraduate obstetric qualifications were unable to negotiate

hospital access agreements for attendance during childbirth (Donley, 1986; McNaughton, 1989);

Legislation to abolish midwife independence and bring domiciliary midwives under obstetrician/general practitioner supervision and strategies to discourage homebirth, eg the Nurses Amendment Acts of 1971 and 1983. The 1986 Obstetric Regulations placed domiciliary midwives under general practitioner supervision; precluded the registration of direct-entry midwives and prohibited midwives, who were not registered nurses, from attending homebirths. The introduction of policies which placed homebirth transfers under the care of trainee obstetricians and prevented the establishment of hospital access agreements for domiciliary midwives. Widespread condemnation of homebirth, vilification of doctors who supported homebirth and the introduction of competence tests for domiciliary midwives by senior obstetricians (Donley, 1986; Health Funding Authority 2000; Mein-Smith, 1986);

- Regionalisation of maternity services and associated closure of small maternity hospitals to consolidate inter-disciplinary involvement in obstetric care, guarantee access to clinical material and training facilities, strengthen links with universities and hospitals and ensure techniques used at National Women's were mirrored throughout the country (Donley, 1986; Mein-Smith, 1986);
- Massive expansion in antenatal risk criteria; technical advances that transformed maternity wards into sophisticated, high risk centres; the introduction complex drug therapies, hormonal induction techniques and procedures for monitoring intrauterine wellbeing, eg electronic foetal monitoring, scalp electrodes, ultrasound, amniocentesis, chorionic villi sampling (Tew, 1990);

On the other hand, however, decision-makers met with unprecedented resistance as consumers and midwives mobilized to form a number of pressure groups who lobbied for the de-medicalisation of childbirth experience. For example, the New Zealand Homebirth Association was founded along with Save the Midwives, the Domiciliary Midwives Society, the Maternity Action Coalition and Health Alternatives for Women. Furthermore, hospital and domiciliary midwives united to establish the New Zealand College of Midwives in 1989. Such fervor was fuelled by international momentum and consciousness-raising on a range of issues (AIMS, 1984; Arms, 1975; Auckland Homebirth Association, 1986; Balaskas, 1984; Birkbeck, 1986; Boyars, 1984; Brook, 1986; Campbell, 1983; Cartwright, 1979; Crisp, 1976; Davis-Floyd, 1987; Donley, 1986; Edwards & Waldorf, 1984; Enkin et al 1989; Ewy & Ewy, 1970; Faulder, 1985; Feldman & Hurst, 1987; Foucault, 1976; Greer, 1984; Haire & Haire, 1972; Illich, 1976; Kitzinger, 1972, 1978, 1979, 1980; Kitzinger & Davis, 1978; Klaus & Kennell, 1976; Lagercrantz & Slotkin, 1986; Le Boyer, 1975; Lumley, 1980; Medvin, 1974; Monaco & Junor,

1980; Montague, 1971; Martin, 1987; Moore, 1988; Oakley, 1980, 1984, 1986; Odent, 1984; Phillips & Rakusen, 1972; Pryor, 1973; Pullon, 1988; Rich, 1977; Shaw, 1974; Swenson, 1980; Tanzer & Block, 1976; Tew, 1988, 1990; Weed, 1989; Widgery, 1988; World Health Organisation, 1982). In general, the impetus created by this mountain of literature served to:

- Increase awareness of alternative birth techniques, including midwife care; demonstrate the safety of planned homebirth by providing evidence of reduced obstetric intervention and better birth outcomes;
- Draw attention to the unjustified use of obstetric interventions and the tendency for one intervention to generally be followed by a cascade of interventions;
- link the use of obstetric technology to lucrative multi-national contracts;
- Question the efficacy of obstetric technology and produce evidence to show that obstetric intervention is not necessarily safer or associated with less complications or improvements in perinatal health and mortality;
- Summon women to recognise that the monopolization of a uniquely female experience by a largely male obstetric profession has led to the destruction of cultural childbirth norms and the need to re-socialise society towards woman-centered childbirth philosophies.

During this period, a notable softening in the rigidity of maternity regimes was evident but, more importantly, the Government moved from passive support for obstetrician-driven systems of care to an open-minded position (Donley, 1986). By the mid-eighties, a review of maternity services had been established along with the Ministry of Women's Affairs, a Standing Committee on Women's Health and the Royal Commission on Social Policy. Consumer submissions to these processes were prolific and displayed clear evidence of widespread dissatisfaction with the structure of maternity service delivery (Committee on Women's Health, 1986; Driscoll & Brockelsby, 1984; Royal Commission on Social Policy, 1988; Women's Health Committee, 1988). In the research arena, a handful of innovative New Zealand studies demonstrated that:

- the mere presence of an obstetrician led to the increased use of obstetric interventions, in normal low-risk deliveries (Tilyard et al, 1989;
- homebirth was safe and cost-effective (Lucas, 1983; McNaughton, 1989; Nash, 1987; Nicol, 1987; Northland Homebirth Association, 1988); and

- the regionalisation of maternity services had led to higher costs, higher rates of obstetric intervention, higher perinatal mortality and there was no evidence to support the claim that childbirth in small hospitals was unsafe. In comparison with large hospitals, low risk delivery in small maternity units was associated with lower rates of perinatal mortality (Kerr, 1986; Rosenblatt & Reinkin, 1984; Rosenblatt et al, 1985).

### **The early to mid-1990s**

Midwives celebrated the dawning of this decade with increased rates of pay, opportunities for hospital access agreements, the reinstatement of direct-entry midwifery programmes and with the 1990 Nurses Amendment Act, their status as fully independent providers of maternity services returned. Obstetricians, however, were unhappy with the move away from specialist care and sought clarification on their referral criteria (Royal New Zealand College of Obstetricians & Gynaecologists, 1994). Furthermore, a number of high profile incidents raised issues about unsatisfactory practice and a lack of accountability in the delivery of maternity services (Bunkle, 1988; Cartwright, 1988; Department of Health, 1992a; Medical Research Council of New Zealand, 1989; Women's Health Committee, 1988). The public had good reason to be confused. On one hand, they were exposed to highly charged debates about the safety of midwifery care and whether or not support for independent midwives served to promote the practice of active-inactivity and so-called anti-interventionist ideologies (Auckland Homebirth Association, 1986; Barber, 1995a, 1995b, 1995c; Churchill, 1995; Ferguson, 1995; Mannion, 1990; Midwifery Advisory Committee 1992; Sutherland, 1995). On the other hand, a burgeoning and increasingly sophisticated literature continued to challenge the efficacy of routine obstetric care (Cararach et al, 1993; Divers & Lilford, 1993; Enkin et al, 1995; Gallagher, 1990; Goer, 1995; Hauraki Homebirth Association, 1995; Hunter, 1993; Kuruvilla et al, 1994; Laracy, 1993; MacKenzie & Boland, 1993; Nielson, 1994; Oakley & Houd, 1990; Smallldridge et al, 1993; Tew, 1990; Young et al, 1994).

Such controversy, in the face of economic recession and a steeply rising annual budget for maternity expenditure, led the four Regional Health Authorities to jointly initiate a national review of maternity services (Coopers & Lybrand, 1993; Denny, 1996; Maternity Services Consumer Council, 1993). The review aimed to particularly evaluate issues associated with the quality of care, the structure of service delivery and cost efficiency. In general, therefore, this was the

atmosphere which enveloped the delivery of maternity services when participants were asked to take part in this research.

### **Specific issues in the delivery of maternity service for Māori**

The history of Māori health development in Aotearoa/New Zealand has been well documented by Durie (1998). This section simply aims to provide a broad understanding of themes and issues which had particular relevance in the delivery of maternity services for Māori, at the time of study.

For Māori, the Treaty of Waitangi, signed in 1840 between indigenous Māori and British newcomers, is the founding document of New Zealand and the basis for relations between Pākehā and Māori. A number of authors have discussed how the Treaty has impacted on Māori over the decades (Belich, 1996; Durie, 1989, 1998; King, 1977, 1981; Orange, 1987; Ritchie, 1992; Scott, 1975; Simpson, 1986; Walker, 1987, 1989, 1990). It was not until the 1980s, however, that the Government sought ways in which to give greater recognition to the Treaty of Waitangi and the Department of Health, in particular, began to re-examine its responsibilities to Māori health (Durie, 1998). In terms of Māori health development, the eighties and early nineties can be characterized by a number of themes:

- attempts to clarify and define the principles implied by the three Treaty of Waitangi articles and their implications for social policy. The principles of partnership, participation, protection, rangatiratanga and redress were identified (Durie, 1998; Jackson, 1988; Kawharu, 1989; Ministerial Advisory Committee on Social Welfare, 1986; Ministerial Advisory Committee on Māori Health, 1990; Royal Commission on Social Policy, 1988)<sup>45</sup>
- clear evidence of a commitment to biculturalism with the Health Department at the forefront of departmental bicultural reforms. The main approaches were increased cultural awareness for health professionals, the establishment of initiatives to promote health awareness among Māori, specific health programmes for Māori and procedures for liaison between hospitals and Māori communities (Durie, 1998; Māori Health Committee, 1987a);
- increased participation of Māori in health policy and decision-making processes, eg the appointment of Māori members to Area Health Boards, the establishment of a Board of Health Standing Committee on Māori Health, a Māori health policy unit, a Māori Health Research Committee and, in 1993, a Deputy Director-General in Māori Health (Durie, 1998; Māori Health Committee, 1987a, 1987b; Standing Committee on Māori Health, 1988);

<sup>45</sup> The principle of (tino) rangatiratanga refers to tribal authority over cultural, social and economic resources.

- mana Māori health strategies and workforce development, greater awareness of Māori health perspectives, Māori participation in the establishment and delivery of health initiatives for Māori (Durie, 1998) and
- greater awareness of institutionalized racism and the need for health practices which do not violate cultural, particularly Māori, values and attitudes. Movement towards the introduction of cultural safety components in the nursing curriculum (Ramsden, 1990, 1995, 2000).

Māori have frequently been disappointed and disheartened by the lack of understanding on biculturalism, the ad-hoc nature of consultation processes and experience of tokenism. For example, Māori recommendations to include specific reference to the Treaty in social policy legislation have clearly been ignored (Durie, 1998). In 1992, however, the Government issued policy guidelines which stipulated that Regional Health Authorities must develop strategies to improve access to health and disability support services among Māori. Similarly, the National Advisory Committee on Core Health and Disability Support Services also recommended more emphasis on the development of strategies to ensure that primary care for Māori is effective, available and provided in forms that encourage use by Māori (Durie, 1998). In general, therefore, this period brought a number of maternity initiatives for Māori. Such initiatives primarily aimed to raise awareness on Māori maternity issues, make information on maternity care more accessible, address the need for community based maternity facilities and establish a support group for Māori midwives.

Three approaches were used to raise awareness on Māori maternity issues and make information on maternity care more accessible. Firstly, the Health Department's widely distributed publication *Your Pregnancy* was partially translated into te reo Māori in 1985 (Department of Health, 1985a). Furthermore, *Waiora* and *Te Puawai Tapu* were established as national health promotion agencies for Māori. Of the two, Te Puawai Tapu was formed later and specifically aimed to provide policy advice on reproductive health issues for Māori. However, both agencies distributed health information and encouraged acceptance of Māori world views. Indeed, Waiora pioneered the use of media for Māori health promotion and in 1986 this agency was involved in the release of a TV documentary about traditional Māori childbirth practice which generated considerable excitement. Secondly, at least eight national hui were held to debate and develop a Māori childbirth perspective during 1988-1992, (Hetaraka, 1990; Otepoti Report, 1988; Silver & Palmer, 1990; Te Parekereke te Roopu

Whakawhanau, 1992)<sup>46</sup>. These were publicly funded and primarily supported by the Ministry of Women's Affairs, Area Health Boards and the New Zealand Homebirth Association. And in 1993 a Māori Working Group was appointed to advise the Regional Health Authority Maternity Review Team (Māori Working Group, 1996).

Throughout the country, a number of community and marae-based health clinics also emerged to provide ante- and postnatal care alongside other health services (Durie, 1998; Murchie, 1984). In this regard, Inez Kingi and the Women's Health League launched their *Tipu Ora* programme of ante- and postnatal care for Māori (Te Puni Kokiri, 1994). Furthermore, *Te Hiiri Hauora* was established as a one-year pilot-scheme to provide marae-based midwifery care, antenatal education, birthing facilities and postnatal services for Māori at Papakura Marae in 1992 (Ropiha & Middleton, 1993). Most initiatives had firm links with local iwi and networked with a range of agencies including Plunket, the Māori Women's Welfare League, La Leche League, Women's Refuge, general practitioners and health authorities (Bryant, 1994; Durie, 1998; Harris, 1994; Ministry of Health, 1994; Ropiha & Middleton, 1993).

In the early nineties, fewer than sixty Māori midwives were registered in New Zealand and roughly a third were based in the Auckland region (Nursing Council of New Zealand, 2000). In 1992, however, the Auckland midwives came together to form the inaugural Māori midwives collective, *Putea-o-Pua* (Te Ohu Whakatupu, 1994). This collective mainly aimed to give the midwives a firm identity, consolidate the objectives of Māori midwives and champion the principle of whānau involvement in maternity care. It also provided the foundation for establishment of a national Māori midwives collective.

In summary, therefore, the eighties and early nineties represent a period of considerable progress towards the achievement of Māori health goal, although Māori themselves were frequently disillusioned and some regions were clearly reluctant to accept change (Durie, 1998). In Hauraki, when recruitment of participants in this research took place, the commitment to Māori health objectives was primarily demonstrated by the appointment of a Māori community health worker as part of the Mental Health Team. This woman was accountable to the Hauraki District Māori Council, the Thames Mental Health Team and Waikato

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<sup>46</sup> During this period, hui to discuss Māori childbirth issues took place at Mangamuka, New Plymouth, Parihaka, Whangarei, Paeroa, Thames and Auckland.

Area Health Board. Te Roopu Hauora, a voluntary group of Māori women, was formed to support her. In addition, one of the twenty-three midwives working at Thames Maternity Hospital was of Māori ethnicity.



## **Chapter Three**

### **Ngā Pūtake**

#### *Psychological mediators & mechanisms*

This chapter aims to provide an understanding of psychological theories which underlie research on the quality of childbirth experience. This is intended to provide a context for the material contained in Chapters Four and Five which review the literature on psychological mediators of childbirth and the breadth of knowledge on Māori childbirth experience. Three schools of thought are of particular interest. The first posits the view that experience of life events and stress can be mediated by coping and social support. The second suggests the process of cognitive appraisal predicts response to stress and the likelihood of health-care behaviours. And thirdly, this chapter looks at the theoretical evidence which suggests that culture and ethnic identity have the capacity to mediate experience of life events.

#### **Coping and social support**

Childbirth is clearly a life event of considerable significance. Although it is often a joyous occasion, the journey through pregnancy and childbirth generally involves lifestyle changes which can be stressful given that contemporary women will mostly go through the experience once or twice in their lifetime. Over several decades, a vast number of psychologists have examined factors that mediate experience of stress (Aspinwall & Taylor, 1992; Bandura, 1986, 1991; Cohen & Wills, 1985; Cutrona, 1986; Dunkel-Schetter et al, 1987; Gottleib, 1983; Kasl & Cooper, 1995; Kessler et al, 1985; Lazarus & Folkman, 1984; Litt, 1988; Miller, 1979; Rutter et al, 1993; Seyle, 1978; Thoits, 1982, 1986; de Vries & Backbier, 1994). In recent years, the notion of stress as an identifiable and measurable outcome has come under attack and attention has turned to the psychological mediators of specific life events (Kasl & Cooper, 1995). In this regard, the concepts of coping and social support have proven particularly robust. However, those who have examined the juxtaposition of information on these conceptual domains have produced evidence which suggests the need for a single, unifying

theory (Cohen, 1995; Collins et al, 1993; Dunkel-Schetter et al, 1987; Kessler et al, 1985; Leventhal & Tomarken, 1996).

### ***Coping***

Cohen (1995) suggests that “coping and coping processes refer to any efforts to manage demands, including processes that others might label as defences” (pg 284). Numerous studies have shown that coping is an important factor in recovery from illness and a mediator in the relationship between stress and illness (Andrew, 1970; Cohen & Lazarus, 1973; Holmes et al, 1978; Jacobson, 1938; Janis, 1958; Johnson & Leventhal, 1974; Kessler et al, 1985; Kobasa et al, 1982; Langer et al, 1975; Lau, 1982; Turk et al, 1983; Wideman & Singer, 1984; Suls & Wan, 1989). In general, it seems behavioural coping strategies are better mediators of physiological response to stressful stimuli whereas cognitive strategies have more effect on tolerance for pain and participant mood. People trained in coping withstand greater pain than those who are not and individuals with a variety of strategies at their disposal are most protected against the negative effects of stress.

However, the coping literature is clearly beset with conceptual and methodological problems (Cohen, 1995; Kessler et al, 1985). To address such issues, various authors have attempted to clarify the functions of coping behaviour as well as the modes through which coping is expressed, the outcomes expected from coping strategies and issues which have impacted on the measurement of coping (Cohen, 1995; Collins et al, 1993; Folkman et al, 1986; Kessler et al, 1985).

It is suggested, for example, that coping primarily serves problem-solving or emotion-regulation functions. Functions of the former type deal with internal or environmental threats whereas those of emotion-regulation involve efforts to modify the distress that accompanies threat. The distinction between these functions is not always clear as most people use both strategies simultaneously and contextual information is needed to understand which function the coping strategy serves. Furthermore, Cohen (1995) has identified five main modes of coping: information-seeking, direct action, inhibition of action, intrapsychic processes and turning to others for support. These modes are mostly self-explanatory but intrapsychic processes refer to the way in which people may reappraise the situation as, for example, when a threat is denied or distraction

techniques are used. It seems coping modes are often confused with the outcomes of coping which have an effect on psychological, social or physiological domains (Cohen, 1995). Psychological outcomes include emotional reactions, feelings of wellbeing and performance on tasks whereas social outcomes refer to changes in interpersonal relationships and physiological reactions may be short- or long-term. Various studies have shown that the adaptiveness of coping modes depends on three factors: the domain of outcome, the point in time and the context (Cohen, 1995). For example, the expression of emotion may intensify symptoms for patients with heart disease but among cancer patients, this coping strategy is associated with longer survival.

The instruments which have been used to measure coping lack consistency and there is no consensus on the most effective technique (Billings & Moos, 1981; Cohen & Lazarus, 1973; Folkman & Lazarus, 1980; Pearlin & Schooler, 1978). However, coping can be measured as a disposition (trait) or as an episodic strategy (Cohen, 1995; Folkman et al, 1986; Kessler et al, 1985). Dispositional coping refers to the tendency to use a particular type of coping strategy across a range of situations and generally reflects a person's value system, attitude or psychological frame-of-mind. Among others, concepts of hardiness, learned resourcefulness, self-esteem, optimism, locus of control, religiosity, interpersonal trust, self-actualisation, compliance and authority have been used in this context. In contrast, episodic coping refers to strategies that are used in a particular situation. Furthermore, some instruments measure only one dimension of coping whereas others may assess multiple dimensions of coping. Cohen (1995) suggests considerable conceptual and empirical effort is needed to bring clarity to the study of coping.

### ***Social Support***

A long history of research has shown that social support can not only mediate response to life events but also buffer the effects of stress (Broadhead et al, 1983; Cassel, 1974; 1976; Cobb, 1976; Cohen & Wills, 1985; Collins et al, 1993; Dunkel-Schetter et al, 1987; Gottleib, 1983; Kessler et al, 1985; Mueller, 1980; Thoits, 1982, 1986). It seems social support can have a beneficial influence on the likelihood of disease outcomes, psychiatric illness, recovery from illness, mental health and feelings of wellbeing.

It is generally accepted social support involves the exchange of resources between individuals although several taxonomies have been used to define the types of resources involved (Cassel, 1976; Cobb, 1976; Hinde, 1979; Nuckolls et al, 1972; Thoits, 1982; 1986). Current theory suggests three main categories (Collins et al, 1993; Pierce et al, 1996). Social support primarily involves the provision of emotional resources which may, for example, foster feelings of love, care, self-esteem; informational resources, such as, advice or guidance, and/or instrumental resources which, for example, provide tangible, physical or practical assistance. The use of social support has been linked to characteristics of the recipient and provider as well as the context, particular circumstances involved and the size of networks (Bolger & Eckenrode, 1991; Collins et al, 1993; Dunkel-Schetter et al, 1987; Gottlieb, 1983; Kessler et al, 1985; Lakey & Cassidy, 1990; Mueller, 1980; Thoits, 1986).

Furthermore, the need for social support measures which distinguish between perceived and enacted, or actual, resources has become increasingly evident (Kessler et al, 1985; Barrera, 1986; Collins et al, 1993). Reliable measurement of enacted support is known to involve assessment of the amount received as well as the timing, quality and source of resources. In addition, it appears some situations may have implicit norms that support is required whereas others indicate the need for privacy or tangible assistance (Dunkel-Schetter et al, 1987). Among contemporary theorists, therefore, social support is seen to be a complex and multi-dimensional metaconstruct which comprises several empirically distinct components (Collins et al, 1993; Pierce et al, 1996). Understanding of such processes, during times of stress, is far from complete.

### ***Towards a unifying theory***

Evidence of the need for a unifying theory which embraces the coping and support conceptual domains stems from two main sources.

In the first place, it seems both processes rely on the same mechanisms. Indeed, three types of mechanisms can largely explain the link between psychosocial factors and health outcomes. Firstly, psychosocial stimuli may have a direct effect on physiological systems which sustain health (Contrada & Krantz, 1995). Central to this mechanism is the notion that environmental events are transduced by the brain into complex neural, hormonal and metabolic reactions which reduce susceptibility to illness. For example, both the coping and social

support literature has been linked to activation of the endogenous opioid system as well as levels of autonomic arousal and catecholamine secretion (Bandura et al, 1988; Cohen & Williamson, 1991; Elbourne et al, 1989; Jemmott & Lock, 1984; Madge & Marmot, 1987). Secondly, psychosocial factors, such as coping and social support, may influence the performance of health care behaviours and reduce the likelihood of unhealthy lifestyles (Collins et al, 1993; Cutrona & Troutman, 1986; deVries & Bachbier, 1994; Elbourne et al, 1989; Pagel et al, 1990; Tietjen & Bradley, 1985; Zweig et al, 1988). And thirdly, psychosocial processes may also enhance feelings of positive affect, wellbeing, personal control and optimism; improve the quality of interpersonal relationships and lessen the impact of physical strain, fatigue or burden (Collins et al, 1993; Elbourne et al, 1989; Major et al, 1992; Pierce et al, 1996; Wenzel, 1993).

Support for the notion of a unifying theory to embrace both coping and social support is also found in the literature which suggests these conceptual domains may be linked by multiple processes of reciprocal and causal interaction (Cohen, 1995; Folkman et al, 1986; Gottleib, 1983; Heller & Swindle, 1983; Kasl & Cooper, 1995; Kessler et al, 1985; Pierce et al, 1996; Scheier & Carver, 1987; Thoits, 1982; de Vries & Backbier, 1994). For example, disposition and intrapsychic modes of coping are known to play an important part in determining not only the receipt of social support but also the propensity to use coping strategies and the degree to which an event is actually perceived as aversive. During times of stress, it seems turning to others for support may be a particular coping mode.

Dunkel-Schetter et al (1987) have shown that coping styles are the best predictors of support receipt but each resource is influenced differently. In this study, dispositional styles primarily determined the receipt of emotional support whereas coping modes influenced the receipt of instrumental and informational resources. Furthermore, styles which served a problem-solving function were associated with more support and more emotional support than emotion-regulation styles. Certain dispositions also led to more support than others. For example, people who valued family life and had higher levels of interpersonal trust received more support whereas people who valued self-actualisation and/or felt the provision of support might threaten their self-esteem received the least. Such findings led the authors to suggest the mode and style of coping behaviour may

provide cues to network members on the need or desire for social support during times of stress. In other words, it seemed the interplay of cognitive processes between donor and recipient communicated whether support was needed and the type appropriate.

Although Dunkel-Schetter et al (1987) found that social support was determined by coping, others have shown that the relationship is reciprocal (Cozarrelli, 1993; Lazarus & Folkman, 1984; Kessler et al, 1985; Pierce et al, 1996; Thoits, 1986). Coping style, for example, has been associated with the structure, timing and composition of support and receipt of specific resources has been shown to reduce threat appraisal which may, in turn, circumvent the need for coping strategies. By way of explanation for such equivocal findings, various theorists have emphasized the manner in which cognitive appraisal may guide the use of coping behaviour and shape response to stress. In the words of Cohen (1995) it seems “a stressor is not a stressor until it is experienced as such” (pg 311).

### **Cognitive appraisal**

Substantial support for the view that cognitive appraisal can mediate experience of life events is found in the literature on tolerance for pain. Indeed, tolerance for pain is generally depicted as a psycho-biologic event (Bandura, 1986). The process of cognitive appraisal has been shown to influence both physiological and affective responses to pain and this has been attributed to a variety of psychosocial factors, such as, the context in which it occurs, previous experience, vicarious learning and attitude (Bandura, 1986; Beecher, 1959; Bond, 1979; Evans, 1974; Fields, 1987; Levendusky & Pankratz, 1975; Melzack, 1984; Melzack et al, 198; Melzack & Wall, 1982). Others have claimed the key to effective amelioration of pain lies in the accuracy of subjective expectations (Chapman & Turner, 1986; Arntz et al, 1991; Miller, 1981). In general, however, the notion of cognitive appraisal suggests individuals play an active role in the construction of psychological experience and the utilisation of strategies which mediate life events.

Various theorists have defined the process of cognitive appraisal and developed models to predict the use of strategies which may mediate life events (Ajzen, 1985; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Bandura, 1986;

1991; Heller & Swindle, 1983; Lakey & Cassady, 1990; Rosenstock, 1974). Three models have been most influential.

In particular, Rosenstock's *Health Belief Model* aims to predict the use of preventative health behaviours (1974). This model has two main variables: the value an individual places on a particular goal and an individual's estimate of the likelihood that a given action will achieve that goal. The first variable is said to be influenced by perceptions about personal susceptibility, or vulnerability, and the severity of the situation, that is, how the disease or illness will impact on personal lifestyle. In a similar manner, the second variable is weighted by an individual's perceptions on the rewards or costs of doing the behaviour. Such perceptions are said to be modified by demographic factors and cues on the need for action, such as the manifestation of symptoms or a media campaign. The Health Belief Model has been tested in a range of contexts with some success (Champion, 1990; Hayes, 1991; Janz & Becker, 1984)

In contrast, Fishbein & Ajzen's *Theory of Reasoned Action* has suggested behavioural intentions, the immediate antecedent to behaviour, are a function of attitudinal beliefs about the likelihood that performing a behaviour will lead to a specific outcome and subjective norms about the appropriateness of performing particular behaviours (1975). A large number of studies have shown this model can predict health behaviours when such behaviours are under volitional control (Ajzen & Fishbein, 1980; Sheppard et al, 1988; Tesser & Shaffer, 1990). In 1985, Ajzen proposed an extension to this theory. The improved Theory of Planned Action suggested three variables, rather than two, determined behavioural intentions, namely, attitudinal beliefs, subjective norms and perceived control. Perceived control is said to influence behaviour directly and indirectly through behavioural intentions. This modification has allowed the model to predict behaviours under either volitional or perceived control (Madden et al, 1992). Furthermore, this modification aimed to bring the model into line with Bandura's influential theory of self-efficacy (Bandura et al, 1980).

In 1986, Bandura's *Social Cognition Theory* placed self-efficacy at centre stage. This concept is defined as "a judgement of one's capability to accomplish a certain level of performance" (Bandura 1986, pg 391). It is suggested perceptions of self-efficacy result from multiple and dynamic processes of cognitive appraisal. Such processes are said to integrate four main sources of self-efficacy knowledge,

namely: knowledge gained from past experience of success or failure; vicarious knowledge gained from examples set by similar others; knowledge gained from verbal persuasion or persuasory efforts and knowledge gained from personal assessments of physiological condition. Ensuing judgements are seen to influence decisions on what courses of action to pursue; how much effort to expend, or persistence in the face of obstacles, and the extent to which people will dwell upon personal deficiencies or take heed of potential difficulties. It seems perceptions of self-efficacy regulate the performance of all behaviours, except those which are habitual or routine, but will not come into play unless there is some incentive or reason to perform a given behaviour. To this end, Bandura's model includes an outcome expectancy variable which represents a subjective judgement on the likely consequence any behaviour may produce. Perceptions of outcome expectancy are seen to be largely determined by societal influence (Bandura, 1986).

In Bandura's view, cognitive strategies which aim to mediate stress and life events are only effective to the extent that they enhance subjective efficacy perceptions (1991, 1992). This position has been supported by numerous studies in a wide range of contexts (Cozzarelli, 1993; Cutrona & Troutman, 1986; Holahan & Moos, 1991; Major et al, 1992; Schiaffino & Revenson, 1992; Wenzel, 1993). Among theorists, therefore, self-efficacy is one of two mechanisms which have demonstrated the capacity to mediate the process of cognitive appraisal (Aspinwall & Taylor, 1992; Litt, 1988; Turk et al, 1983). The second mechanism is perceived control (Rotter, 1966; Zuckerman, 1979). Research findings on the effectiveness of perceived control and self-efficacy as mediators of life-events have typically tended to parallel each other. Both constructs have demonstrated the ability to increase tolerance for pain and task persistence, reduce physiological and affective expressions of distress and enhance post-event appraisal. Nevertheless, convergence towards the idea that self-efficacy may be a superior mechanism is apparent (Aspinwall & Taylor, 1992; Carver et al, 1989; Cutrona & Troutman, 1986; Holahan & Moos, 1991; Major et al, 1992; Schiaffino & Revenson, 1992). It seems feelings of efficacy are more likely to generate coping behaviours which directly target the problem at hand (Cozzarelli, 1993; Wenzel, 1993).



Although the above models have used different approaches to describe how the process of cognitive appraisal may mediate response to life events, a common element is evident. All have acknowledged the manner in which cognitive appraisal may be influenced by socio-cultural factors like, for example, societal influence, subjective norms and demographic variables. It is clear, therefore, that culture and ethnic identity may also play an important role in the mediation of life-events.

## **Culture and ethnic identity**

The desire to understand mechanisms involved in the acquisition of culture and the influence of culture on psychosocial development has been evident across a range of disciplines for many decades (Freud, 1910; Galton, 1883; James, 1890; Koffka, 1935; Levy, 1969; Linton, 1945; Mead, 1932; Shand, 1914; Super & Harkness, 1986; Witkin, 1962). By the middle of last century, contributors to the nature-nuture controversy had proposed a range of mechanisms around which contemporary theories have evolved. Two broad schools of thought have particular eminence.

Firstly, a large number of theorists have put forward the notion that transmission of culture may have a genetic, heredity or inherited foundation (Bruner, 1981; Deregowski, 1968a, 1968b; Eysenck, 1964; Hetherington & Parke, 1979; Hoffman, 1981; Lorenz, 1966; McKellar, 1968; Maslow, 1962; Miller, 1973; Morgan, 1985; Sheldon, 1944; Wilson, 1975; Vygotsky, 1978). In brief, it is suggested humans are genetically primed to not only associate certain events more easily than others but also utilise culturally relevant styles of perception, rhythm, communication and cognition (Berry, 1976, 1986; Seligman & Hager, 1982). Such genetic predisposition is likely to be consistent with functional and structural aspects of the lifestyle and environment (Blacking, 1989; Jahoda & Lewis, 1989). For example, the mechanisms which underlie sociocentric behaviour in infants have been clearly attributed to innate predisposition (Bandura, 1986; Bruner, 1971; Chomsky, 1965; Hetherington & Parke, 1979; Piaget & Inhelder, 1969; Trevarthen, 1989; Vygotsky, 1978).

The findings of neuro- and physiological psychologists provide support for this view (Carlson, 1981; Chusid, 1982; Gazzaniga & Le Doux, 1978; Gray, 1982; Hebb, 1980; Kolb & Wishaw, 1981; Luria, 1975). Within the human brain, it

seems the foundation for development of cognition, memory, perception and language is genetically transmitted. Unlike motor/sensory functions, which are controlled by cortical localisation, the development of higher mental processes is linked to the transfer of information between left and right hemispheres as well as cortical and subcortical structures. The transfer of such information relies on genetically determined strategies which contribute, in turn, to a self-aggrandizing process of cell specialization. In this way, therefore, the neural processes which underlie cognition, memory, perception and language can differ between cultures.

Of components within the brain, it seems the hippocampus primarily determines when attention should be paid to particular stimuli and which neural pathways should be used. This structure is part of the archicortex, which means it has been present throughout evolution, and the interface between subcortical (archicortex) and cortical (neocortex) structures. In terms of the human brain having a component which not only ensures a predisposition to pay attention to culturally relevant information but also has the capacity to integrate information gained from day-to-day experience in a manner which can pass genetically from one generation to another, the hippocampus would seem well placed.

However, the weight of research on mechanisms involved in the transmission of culture has focused on the role of socialization and highlighted the need to understand socialization practices within the context of culturally valid world-view perceptions (de Casper & Fifer, 1980; Graves & Graves, 1981; Jahoda & Lewis, 1989; Levy, 1969; Madsen & Shapira, 1970; Mehler & Fox, 1985; Minton et al, 1971; Nilsson, 1990; Ritchie & Ritchie, 1970; 1978; 1983; 1985; Stayton et al, 1971; Whiting & Whiting, 1975). From the first moments of life, it seems the pattern of maternal-infant interaction forms the basis for establishment of culturally relevant turn taking routines (Bruner, 1981). Parental play with infants is constructed around accepted norms and the child quickly learns to expect appropriate behaviour (Hetherington & Park, 1979; Jahoda & Lewis, 1989). This is linked to an increasingly complex involvement in selective, co-operative and imitative behaviour (Bloom, 1973; Le Vine, 1984; Trevarthen, 1989). When speech floods the mind, abundant categories of meaning are already present. The acquisition of language is constructed in culturally consistent ways which reinforce the validity of a young child's predisposition towards a particular

cognitive style (Bloom, 1973; Bruner, 1981; Brown, 1980; Salmond, 1986). As children are exposed to a multitude of new information, the preference for familiarity continues to play a major influence (Dragadze, 1989; Trevarthen, 1989).

A wide range of culturally specific cognitions and behaviours as well as particular styles of learning and communication have been linked to socialization experience (Bem, 1981; Cole et al, 1971; Graves & Graves, 1974; 1976; 1981; 1982; Jahoda & Lewis, 1989; Ritchie & Ritchie, 1978; 1983; 1985; Shapira & Madsen, 1969). For example, socialization practices are known to determine the expression of emotions and praise, the use of verbal and non-verbal communication techniques, modes of inter-personal interaction, the development of subjective norms, expectations and gender-based role divisions, propensity towards feelings of independence, autonomy and/or self-reliance and willingness to participate in co-operative tasks or consensus-oriented conflict resolution strategies.

Contemporary theorists have highlighted the need to understand cultural factors which may shape the capacity to utilise coping strategies in times of need (Bochner, 1982; Dilworth-Anderson & Marshall, 1996; Jahoda & Lewis, 1988; Peirce et al, 1996; Vaux, 1988). It is clear that family and/or cultural norms have an influence on not only the socialization of emotional support skills in children but also the development of adult attachment and social competency behaviours and all three variables are known to have an impact on the use of social support as a coping strategy (Heller & Swindle, 1983; Kasl & Cooper, 1995; Peirce et al, 1996). Cultural factors are known to influence the size of social support networks which may, in itself, have a number of implications. Large networks, for example, may enhance perceptions of available support, promote feelings of belonging and intensify peer group pressure to conform to normative standards of behaviour (Collins et al, 1993). Tolerance for pain may also be influenced by cultural norms (Bandura, 1986; Cheung, 1994). Furthermore, experience of prejudice and/or social bias may impact on the development of attitudinal beliefs about personal vulnerability and the likely consequences of behaviour which may, in turn, influence the processes of cognitive appraisal and the nature of coping strategies (Bandura, 1986; Fishbein & Ajzen, 1975; Gurin & Brim, 1984; Janz & Becker, 1984). Among some groups, it seems culturally specific processes of socialization

may serve to foster life-long experience of failure, disadvantage and inequity (Balzer et al, 1997; Dewes, 1984; Hirsch, 1990; Levison, 1989; McMaster, 1997; Ritchie & Ritchie, 1990; St George, 1983; Sanson & Prior, 1989; Shaefer, 1988; Smith, 1990).

Several decades ago there was a shift away from the idea that culture, *per se*, was the main determinant of socialization experience. This reflected the need for paradigms which viewed socialization as a dynamic and life-long process that not only involved exposure to other cultures but also led to different experiences of acculturation and differences in the desire for cultural affiliation (Cowlshaw, 1986; Eckermann, 1988; Graves & Graves, 1981; Novitz & Willmott, 1989; Ritchie, 1992). In America, therefore, the concept of cultural identity emerged along with a number of models which aimed to explain how feelings of cultural identity may influence minority group acceptance of majority group behaviour, attitudes and values (Bochner, 1982; Cross, 1971; Furnham & Bochner, 1982; Parham & Helms, 1981; Pomales et al, 1986; Sue & Sue, 1977). In brief, this body of literature suggested that acceptance of the majority group was primarily determined by the level, or stage, of cultural identity development. Sue & Sue (1977), for example, put forward a five stage model in which members of a minority group initially accepted everything from the dominant culture but could progress through stages of dissonance, resistance and conflict to a final position of synergetic articulation wherein values from both groups were acceptable. In American minority groups, cultural identity has been shown to influence the utilisation of health services (La Fromboise, 1988; Furnham & Bochner, 1982; Rappaport & Rappaport, 1981).

Within Aotearoa/New Zealand, at least two models have aimed to identify various stages in the development of Māori cultural identity (Davies et al, 1994; Tukukino, 1989). Like their American counterparts, both models have used acceptance of dominant group values and behaviours as a reference point for describing Māori cultural identity. Others have measured Māori identity in terms of familiarity with aspects of the culture, such as, for example, the language and/or traditional protocols (Ratima et al, 1993; Thomas, 1988).

More recently, Māori have moved towards the concept of an ethnic, rather than cultural, identity. This shift reflects a number of important themes. In particular, the concept of ethnic identity is in tune with the recent introduction of

ethnicity as a means for classifying people in New Zealand and the change to self-affiliation procedures (Brown, 1983; Kilgour & Keefe, 1992; Robson & Reid, 2001; Shipley & Peters, 1998). It also reflects increasing awareness on the diversity of Māori identity (Durie, 1995a; 1995b; 1996a; 1998). Far from being a homogenous group, a number of studies have shown that Māori may display a variety of cultural characteristics and experience a range of demographic and socio-economic positions. The concept of Māori ethnic identity also acknowledges the manner in which Māori are able to choose the ethnic group with which they wish to affiliate and such choice can change with circumstance or over time. Irrespective of cultural familiarity, the choice of a Māori ethnic identity inherently suggests a desire to affiliate with things Māori. In this regard, therefore, an important factor would seem to be whether Māori display an active or passive approach to participation in te ao Māori. As a possible mediator of life events, at least one recent study has shown that active participation in te ao Māori leads to better health outcomes for Māori (Durie et al, 1997).

This chapter has provided a framework for thinking about theoretical issues which have relevance for the particular topic under study. Against this background, the next chapter reviews the vast body of literature on psychosocial mediators of childbirth experience.

# **Chapter Four**

## **Te Puawaitanga**

### *Psychosocial mediators of childbirth*

The identification of psychosocial variables which may improve soft and hard indicators of perinatal outcome is an important field of study. A mounting body of evidence has shown that experience of a particularly traumatic or stressful delivery may be a factor in the development of post-partum psychological problems for mother and infant (Allen, 1998; Beck et al, 1980; Black-Olien, 1993; Carey-Smith, 1984; Gordon & Gordon, 1960; Kitzinger, 1991; Hopkins et al, 1984; Oakley & Rajan, 1990; O'Hara et al, 1982; Thune-Larson & Moller, 1988; Stott 1973). In addition, experience of obstetric technology in labour is known to have a negative and cumulative effect on maternal quality of childbirth perceptions (Green et al, 1990; Oakley & Rajan, 1990). Within New Zealand, the quality of childbirth experience has largely been conceived in terms of maternal satisfaction with care.

Within the context of childbirth experience, satisfaction is known to be a notoriously unreliable measure of quality (Bennett, 1985; Erb et al, 1983; Lumley, 1985; Shearer, 1983). In New Zealand, therefore, the development of knowledge on psychosocial variables which mediate birth outcomes would not only be beneficial, as of right, but may also provide other ways to conceptualise and measure the quality of childbirth experience.

This chapter aims to provide a broad overview of the literature on psychosocial mediators of childbirth experience. An enormous body of research, from a wide range of disciplines, has focussed on this issue. In general, such studies have identified five main groups of mediators: socio-demographic variables, cognitive appraisal, coping strategies, social support and culture.

#### **Socio-demographic variables**

Various authors have examined the manner in which socio-economic status may influence the quality of childbirth experience (Lobel et al, 1992; Oakley, 1992, 1993; Rutter et al, 1993; Tew, 1998). This work has clearly shown

that women from lower socio-economic groups experience higher rates of preterm delivery, low birthweight infants and infant mortality during the perinatal and postneonatal periods. In addition, women from lower socio-economic groups are more likely to experience complications during pregnancy and delivery notwithstanding the likelihood of direct relationships between these variables.

A number of studies have shown that the frequency of life events is higher among women from lower socio-economic groups, especially if they have children at home, and experience of life-events during pregnancy has been directly associated with pre-term and low birth weight delivery (Berkowitz & Kasl, 1983; Newton et al, 1979; Newton & Hunt, 1979; Oakley, 1993; Rutter & Quine, 1993). Among women in this group, perinatal health is likely to be further disadvantaged by a range of inter-related factors, notably, propensity towards maternal smoking during pregnancy, less utilisation of health services, poor education, lower levels of psychological wellbeing and other indicators of maternal deprivation (Rutter & Quine, 1993). In addition, it seems working class women tend to feel less supported during pregnancy, are more likely to attribute their health to chance and have negative feelings about pregnancy, are more likely to favour the use of obstetric technology and are less satisfied with the quality of their birth experience (Cartwright, 1979; Nelson, 1983; Rutter & Quine, 1993).

With regard to antenatal class attendance, women of higher socio-economic status are clearly the most likely to participate in this system (Cartwright, 1979; Gunn et al, 1983; Hutton et al, 1982; Lumley & Astbury, 1980; Nelson, 1983; Poland et al, 1987; Salmond, 1976). Attenders, therefore, have been associated with an information-seeking style, desire to participate in decision-making processes and the tendency to supplement information gained from antenatal classes with a range of other resources (Cartwright, 1979; Lumley & Astbury, 1980; Nelson, 1983; Hillier & Slade, 1989; Green et al, 1990).

In comparison with attenders from higher socio-economic groups, working class women tend to feel less satisfied with the information received during pregnancy, are more likely to say they have not received enough information and are less likely to understand the information provided (Rutter & Quine, 1993). Furthermore, working class and younger women are less successful at obtaining information about pregnancy and have less knowledge about childbirth issues prior to attendance at antenatal classes (Cartwright, 1979; Hillier & Slade, 1989).

Among class attenders, however, socio-economic status does not seem to impact on the use of analgesia during labour (Enkin et al, 1972; Huttel et al, 1972).

### **Cognitive appraisal**

Few have looked at the manner in which models of cognitive appraisal may influence childbirth behaviour<sup>47</sup>. Two studies have shown that maternal health beliefs may have a beneficial influence on the performance of health behaviours during pregnancy (Reading et al, 1982; Zweig et al, 1988). In addition, evidence of a positive correlation between maternal self-efficacy perceptions and persistence with coping strategies in labour as well as the length of time before requesting medication for pain-relief has been documented (Manning & Wright, 1983). These authors found an inverse relationship between self-efficacy and the amount of pain-relief administered. Madden et al (1993) have also shown that the process of cognitive appraisal may predict the maternal satisfaction with the quality of birth experience. More recently, Slade et al (2000) have considered whether maternal use of coping strategies in labour is best predicted by the theory of planned behaviour or Bandura's concept of self-efficacy. This study produced some evidence to suggest the intention to use coping strategies may be predicted by attitudinal beliefs, the importance of beliefs and self-efficacy. The strength of intention to use coping strategies was also associated with the actual use of coping strategies in labour but neither model had much predictive power.

In contrast, a vast body of research has examined the manner in which particular components of maternal cognitive appraisal processes may influence childbirth experience. In this regard, the roles of maternal anxiety, attitude, knowledge, perceived control and confidence have generated most interest.

### **Anxiety**

Numerous authors have identified factors which may exacerbate feelings of maternal anxiety during pregnancy, labour and childbirth (Beck & Siegal, 1980; Burstein et al, 1974; Inch, 1994; Haire & Haire, 1972; Kitzinger, 1991; Monk, 1996; Naaktgeboren, 1972; Preskog et al, 1982; Tietjen & Bradley, 1985; Norbeck & Anderson, 1989; Oakley, 1980, 1993; Shaw, 1974; Standley et al, 1979; Tanzer & Block, 1976; Tew, 1990, 1998). Many have also noted the likelihood of a causal chain between maternal anxiety and the intensity of childbirth pain, the length of



labour, the need for obstetric interventions and feelings of postpartum wellbeing. Evidence of a causal relationship between the use of pain-relieving medication and experience of obstetric complications has been well documented (Enkin et al, 1989; Enkin et al, 1995; Gallagher, 1990; Inch, 1994; Kitzinger, 1991; Odent, 1984; Oakley & Houd, 1990; Tilyard et al, 1989).

Physiological psychologists have also provided empirical evidence of a relationship between maternal cognitions and the length of labour (Zuspan et al, 1962; Lederman, 1979; Lederman et al 1978, 1985; Simpkin, 1986). It seems feelings of state anxiety and/or maternal attitude to pregnancy may impact on the circulation of so-called stress hormones, or catecholamines. During normal labour, the presence of catecholamines is known to have direct and beneficial effects on uterine contractility and various indicators of infant perinatal health. However, experience of undue anxiety, or distress, may cause an abnormal rise in catecholamines. An abnormal increase in maternal catecholamines during labour has been directly linked to less efficient uterine contractions and indirectly associated with slower dilation of the cervix, longer duration of labour, less oxygen flow through the placenta, decreased tolerance for pain and infant susceptibility to a range of potentially fatal disorders (Kitzinger, 1991).

In accordance with this theme, various studies have shown that prenatal anxiety can predict the need for pain relief and the use of induction techniques during labour and delivery (Crandon, 1979a; Gorsuch & Key, 1974; Klusman, 1975; Norbeck & Tilden, 1983; Nuckolls et al, 1972; Zax et al, 1975). In addition, Beck et al (1980) found maternal measures of state anxiety at hospital admission predicted the length of labour whereas trait anxiety during pregnancy predicted maternal willingness to co-operate with maternity staff and the likelihood of postpartum depression. Although Lowe (1987, 1989) has shown that state anxiety in labour is not associated with the intensity of birthpain, this work demonstrated a positive linear relationship between maternal fear of pain and the intensity of her pain ratings in active labour. Furthermore, maternal anxiety during labour is known to increase the likelihood that women will report a negative birth experience (Waldenstrom, 1999).

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<sup>47</sup> Chapter 3 provides a discussion of the Health Beliefs Model, the Theory of Reasoned or Planned Behaviour and Social Cognition Theory.

Other than prolonged length of labour, most recent studies have not been able to demonstrate a relationship between maternal anxiety and obstetric complications in labour (Beck et al, 1980; Brewin & Bradley, 1982; Hillier & Slade, 1989)<sup>48</sup>. It is difficult, however, to draw firm conclusions on this issue as methodologies for the measurement of anxiety have been inconsistent and not altogether appropriate within the context of childbirth events (Astbury, 1980; Beck et al, 1980; Hillier & Slade, 1989). Few, for example, have acknowledged the evidence which suggests that maternal feelings of state anxiety normally fluctuate from an intermediate level in late pregnancy to a peak during labour followed by a return to low postpartum levels (Astbury, 1980; Chalmers, 1982; Deutsch, 1947; Janis, 1958; Kitzinger, 1991). Such findings suggest the concept of maternal anxiety may need to be refined.

### ***Attitudes***

A large body of literature has lamented the likelihood that use of obstetric technologies has intensified with the socialisation of medicalised childbirth paradigms, the disempowerment of women and an associated erosion of maternal confidence (Davis-Floyd 1987, 1994; Davis-Floyd & Dumit, 1998; Deutsch, 1947; Donley, 1986; Edwards & Waldorf, 1984; Faulder, 1985; Greer, 1984; Haire & Haire, 1972; Illich, 1976; Kitzinger, 1972, 1991; Lumley, 1980; Martin, 1987; Mauger, 1996; Monk, 1996; Monto, 1997; Oakley, 1980, 1993; Odent, 1984; Rich, 1977; Shaw, 1974; Tew, 1998; Widgery, 1988). It seems the mere presence of medical imagery is able to induce feelings of compliance, conformity, acquiescence and submission. Furthermore, the meanings attached to childbirth have been transformed by the hegemony of technological models, the socialisation of negative motherhood images and public worship of scientific know-how. Within this literature, various authors have linked maternal acceptance of technocratic ideology to the development of negative childbirth expectations (Davis-Floyd, 1994; Martin, 1987; Mauger, 1996; Monk, 1996; Monto, 1997). Others have demonstrated a relationship between negative attitudes or expectations, experience of obstetric complications, the use of obstetric technology and maternal dissatisfaction with the quality of childbirth experience

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<sup>48</sup> Prolonged length of labour is a risk factor which will increase the likelihood of obstetric intervention (Royal NZ College of Obstetricians & Gynaecologists, 1994).

(Allen, 1998; Doering & Entwistle, 1975; Lederman et al, 1985; Rutter & Quine, 1993; Waldenstrom, 1999).

Green et al (1990), for example, found postpartum reports of a very painful labour and an unfulfilling birth experience were predicted by such expectations. Similarly, women who expected coping strategies to be useful, the ability to cope without drugs and control over childbirth matters were more likely to experience these events. In general, low expectations were associated with poor psychological outcomes whereas high expectations led to more positive indicators of psychological wellbeing. Furthermore, when positive expectations were matched by experience, women reported higher ratings of postpartum satisfaction and emotional wellbeing. Slade et al (1993) have also demonstrated evidence of a relationship between positive expectations in pregnancy, such as the belief that labour would be exciting, enjoyable, satisfying, pleasant or exhilarating, and the likelihood that childbirth would be a positive emotional experience. In pregnancy, it seems positive expectations can co-exist alongside an appreciation of possible negative events. Such findings suggest strategies which facilitate the development of positive maternal expectations during pregnancy may play an important role in determining the quality of childbirth experience.

### ***Knowledge***

There has been little research on the relationship between knowledge and childbirth experience. However, knowledge about childbirth is clearly gained from a range of formal and informal sources and the development of knowledge has been associated with a more enjoyable birth (Doering & Entwistle, 1975; Doering et al, 1980; Cartwright, 1979; Walker & Erdman, 1984; Jacoby, 1988; Hillier & Slade, 1989; Midland Health, 1995). Two randomised controlled trials have shown that women who hold their own maternity files are more likely to feel in control, satisfied with care and well informed (Elbourne et al, 1987; Lovell et al, 1987). Among pregnant women, however, Hillier & Slade (1989) found knowledge did not reduce feelings of anxiety but increased maternal confidence about their ability to cope with labour. In addition, Green et al (1990) found that women who had access to appropriate and adequate information throughout pregnancy, labour and delivery were more likely to report feelings of postpartum fulfillment, satisfaction and emotional wellbeing. These women were also more likely to describe their newborns favourably. And lastly, Quine et al (1993) have

shown that women who feel informed are more likely to feel prepared for childbirth which, in turn, leads to greater satisfaction with the birth experience.

### ***Perceived Control***

The relationship between perceived control and childbirth experience has generated considerable debate. In 1978, for example, Willmuth and colleagues found that tolerance for labour pain was higher among women with perceptions of internal control. In contrast, however, Scott-Palmer & Skevington (1981) showed that women with an external locus of control tended to report less pain. To clarify such issues, Brewin & Bradley (1982) produced evidence to suggest that certain women may prefer to have control over childbirth events but others may not. In this study, expectations about the locus of control predicted tolerance for pain and discomfort during labour.

Nevertheless, several authors have shown linked perceived control to the quality of childbirth experience (Bennett et al, 1985; Doering et al, 1980; Green et al, 1990; Slade et al, 1993). Indeed, control may be more important to the pleasurableness of childbirth than experiencing less pain (Doering et al, 1980). Bennett et al (1985), for example, found satisfaction with childbirth experience was significantly lower among women who reported an inability to cope during labour. Similarly, Green et al (1990) demonstrated evidence of a direct correlation between perceived control during childbirth and feelings of post-partum satisfaction, fulfillment and emotional wellbeing. Strong associations were also found between subjective control and maternal ability to get comfortable. Within this context, the perception of control was not simply a function of involvement in decision-making, drug use or complications during labour, but rather the degree to which women were able to follow intuitive instinct.

In accordance with this theme, Slade et al (1993) produced evidence to suggest that control perceptions may comprise several independent and discrete components. Maternal satisfaction, for example, was predicted by the ability to control feelings of panic. Satisfaction was also predicted by perceptions on the efficacy of coping strategies, ability to control the pain, and the duration as well as the position of labour. To a lesser extent, maternal satisfaction was associated with experience of positive emotions during labour and control over obstetric decisions. Although perceptions on the quality of experience were not directly associated with the intensity of childbirth pain, the results of this study suggested

the relationship between pain and the quality of childbirth experience may be mediated by ability to control panic, use of coping strategies and maternal emotions. In a similar manner, Allen (1998) found that feeling out of control during labour predicted feelings of helplessness and experience of a traumatic birth.

### **Confidence**

Within the context of childbirth events, confidence is often seen to be the antithesis of anxiety and, therefore, an important mediator of childbirth experience (Kitzinger, 1991; Monk, 1990). Although various authors have identified factors which impact on maternal feelings of confidence, few empirical studies have examined the relationship between confidence and childbirth experience. Perhaps this is because confidence, as a measurable construct, has proven difficult to disentangle from a number of related concepts, such as, optimism, perceived control and self-efficacy (Cozarelli, 1993). Nevertheless, Lowe (1989) has shown that maternal confidence in ability to handle labour is significantly associated with the intensity of pain actually experienced. Furthermore, Rutter & Quine (1993) have produced evidence to suggest that maternal confidence may be an important predictor of satisfaction with birth experience.

### **Coping strategies**

As constructs for describing the mediators of childbirth experience, considerable overlap is found between coping strategies and the process cognitive appraisal. Under the mantle of cognitive appraisal, a number of cognitive coping strategies have already been discussed. This material has shown that maternal ability to cope with childbirth may benefit from strategies which reduce anxiety but foster perceived control, confidence, knowledge and positive expectations. Others have provided evidence which suggests that self-preparation and active participation in childbirth events may be effective coping strategies. Furthermore, a vast body of literature has examined the manner in which antenatal education may serve as a coping strategy for childbirth.

### **Self-preparation**

A small body of evidence suggests that self-preparation may be as effective as any other coping strategy to mediate the quality of childbirth experience. Various authors have shown that self-preparation can mediate the use

of pain-relieving medication in labour (Brewin & Bradley, 1982; Bennett et al, 1985; Doering & Entwistle, 1975; Slade et al, 1993). Indeed, personal choice of strategies to cope with birthpain may not only increase the likelihood that such techniques will be practiced prior to labour but may also foster maternal expectations of ability to cope (Avia & Kaufer, 1980; Girodo & Wood, 1979). Jacoby (1988) has shown that advice from family and friends is highly valued as a source of childbirth knowledge among childbearing women.

### ***Active participation***

It is clear that the intensity of birthpain is analagous to the most painful conditions (Brown, 1990; Melzack, 1984; Niven & Gijsbers, 1984; Reading & Cox, 1985). Indeed, several have proposed that the quality of childbirth experience is essentially a function of pain intensity (Arizmendi & Affonso, 1987; Fielding & Benjamin, 1962; Lamaze, 1958; Scott-Heyes, 1982). If this were the case then those assuaged of childbirth pain, through the use of pain-relieving medication, would report a more pleasureable experience. However, evidence of an inverse relationship between the quality of childbirth experience and the use of pain-relieving medication has been demonstrated (Bennett et al, 1985; Doering & Entwistle, 1975). These authors found that childbirth experience was most favourable among women who did not use medicalised pain-relief and least favourable among those who were totally unconscious. Such findings lend considerable support the view that active participation in childbirth events, along with strategies which facilitate maternal consciousness and awareness, may be critical mediators of maternal experience (Davenport-Slack & Boyan, 1974; Doering et al, 1980; Inch, 1994; Kitzinger, 1991; Lumley, 1985; Ritson, 1966; Zax et al, 1975).

### ***Antenatal education***

The objectives of antenatal education have varied widely and clearly changed with time (Cole, 1991; Dick-Read, 1942; Edwards & Waldorf, 1984; Enkin et al, 1989; Gilkison, 1991; Kitzinger 1972, 1978, 1991; Lamaze, 1958; Wideman & Singer, 1984). Over the years, some have claimed that antenatal education provides the means for eliminating pain, anxiety and fear while others have implied benefits of knowledge, confidence, coping strategies and a better quality of experience. A mountain of literature has examined the validity of such claims.

The outcomes of randomized controlled trials have shown that antenatal class attendance is associated with significantly less pain-relieving medication during labour (Enkin et al, 1995). This finding is supported by a plethora of studies (Bennett et al, 1985; Carey, 1957; Charles et al, 1978; Cogan et al, 1976; Doering & Entwistle, 1975; Doering et al, 1980; Hetherington, 1990; Hughley et al, 1978; Huttel et al, 1972; Klusman, 1975; Laird & Hogan, 1956; Nettelbladt et al, 1976; Nelson, 1982; Scott & Rose, 1976; St van Eps, 1955; Tanzer & Block, 1976; Thoms & Wyatt, 1951; Whitley, 1972; Zax et al, 1975).

Participation has also been linked to shorter duration of labour, fewer obstetric complications and less intervention (Carey, 1957; Charles et al, 1978; Clark et al, 1986; Davenport-Slack & Boylan, 1974; Hughley et al, 1978; Laird & Hogan, 1956; Miller et al, 1952; Nelson, 1982; Pearse et al, 1955; Tanzer & Block, 1976; Thoms & Wyatt, 1951). However, some authors have not found a significant difference between the obstetric profiles of class attenders and non-attenders (Bennett et al, 1985; Gunn et al, 1983; Patton et al, 1985). Nevertheless, the use of pain-relieving medication in labour clearly increases the risk of obstetric intervention (Gallagher, 1990; Enkin et al, 1989; Tilyard et al, 1989).

A number of authors have produced evidence which suggests that antenatal education may mediate maternal anxiety in labour (Cogan et al, 1976; Davenport-Slack & Boylan, 1974; Klusman, 1975; Prince & Adams, 1978; Standley et al, 1979; Tanzer & Block, 1976; Walker & Erdman, 1984). Once again, however, others have found no evidence to support this claim (Astbury, 1980; Beck et al, 1980; Brewin & Bradley, 1982; Hibbard, 1979; Hillier & Slade, 1989; Zax et al, 1975). Furthermore, participation in antenatal education may even increase maternal anxiety in labour (Astbury, 1980; Charles et al, 1978; Gorsuch & Key, 1974; Gunn et al, 1983; Klusman, 1975; Patton et al, 1985; Slade et al, 1993).

It has often been suggested that the provision of antenatal information may increase maternal tolerance for pain but this has proven difficult to substantiate (Beck et al, 1980; Slade et al, 1993; Wideman & Singer, 1984). Such studies have shown that receipt of prenatal procedural information has no impact on tolerance for pain, maternal satisfaction or the quality of childbirth experience. In addition, it seems few first time mothers-to-be view antenatal classes as the most helpful source of childbirth information (Jacoby, 1988) It is difficult to ascertain whether antenatal class attendance actually increases maternal knowledge about childbirth

issues (Nunally & Aguiar, 1974; Hibbard, 1979; Hillier & Slade, 1989; Husband, 1983; Walker & Erdman, 1984).

Class attendance has certainly been linked to the use of coping strategies during labour, especially the use of birth-partner support (Bennett et al, 1985; Doering & Entwistle, 1975; Doering et al, 1980; Haloren & Passaman, 1985; Manning & Wright, 1983; Nelson, 1982; Norr et al, 1977; Tanzer & Block, 1976). But it cannot be assumed attenders will always make use of coping strategies during labour and class attendance has been associated with a more painful experience (Bennett et al, 1985; Copstick et al, 1985; Hutton et al, 1982; Gunn et al, 1983; Melzack et al, 1981).

Furthermore, antenatal education may have a detrimental effect on maternal expectations. In primiparous British mothers, for example, participation has been associated with the development of negative, rather than positive, expectations (Hillier & Slade, 1989). In a similar manner, class attendance has been shown to foster the development of inappropriate expectations which can serve to undermine maternal confidence in labour (Brewin & Bradley, 1982; Copstick et al, 1985; Gunn et al, 1983; Hutton et al, 1982; Lumley & Astbury, 1980; Melzack, 1984; Melzack et al, 1981; Slade et al, 1993). Indeed attenders may expect labour to be longer, exhausting, difficult and more painful. Although Bennett et al (1985) demonstrated evidence of a positive linear relationship between the class attendance hours and feeling able to cope with labour, only thirteen percent of those in the high attendance group felt adequately prepared to cope with labour. Class attendance also increased the likelihood that women would say feeling unable to cope was the worst aspect of their labour.

A strong body of evidence has suggested that attenders are more likely to develop an ideal birth plan and receive adequate levels of prenatal obstetric care (Enkin et al, 1989; Haloren & Passaman, 1985; Poland et al, 1987; Salmond, 1976). Furthermore, participation has been associated with the likelihood of breastfeeding, the use of demand, rather than schedule, feeding regimes and reluctance to separate from newborns (Bennett et al, 1985; Doering & Entwistle, 1975; Doering et al, 1980; Rutishauser, 1987).



## **Social Support**

As a mediator of childbirth experience, the concept of social support clearly overlaps with several of the above processes. For example, antenatal classes are a likely source of social support as is the utilisation of prenatal health services. To varying degrees, it would seem most factors which contribute to the development of cognitive processes and coping strategies during pregnancy may provide support resources. A vast and burgeoning body of literature can, therefore, be used to demonstrate the various ways in which social support may have a beneficial influence on soft and hard indicators of childbirth experience (Field et al, 1985; Hodnett, 2002; Oakley, 1988, 1992; Oakley et al, 1986; Ray, 2002).

In recent years, there has been a call to adopt empirical and theoretical frameworks which may allow the relationship between social support and pregnancy outcome to be systematically studied in a more rigorous manner (Dunkel-Schetter et al, 1996). Within the context of childbirth events, it seems the study of enacted, rather than perceived, support may be most beneficial and the need to distinguish between emotional, tangible or instrumental resources has been highlighted. Towards this end, existing research has been grouped into three main categories, namely: correlational studies which examine the relationship between prenatal support and pregnancy outcome; intervention studies which investigate the benefits of social support during pregnancy and studies that have examined the benefits of a supportive companion during labour and delivery (Dunkel-Schetter et al, 1996). The following section consolidates the material which has looked at the manner in which social support during pregnancy and labour or delivery may impact on the quality of childbirth experience.

### ***Social support during pregnancy***

A number of studies have examined the manner in which prenatal social support may impact on the development of maternal emotions and health care behaviour during pregnancy (Olds et al, 1986; Pascoe et al, 1987; Spencer et al, 1989; Turner et al, 1990). Several have shown that social support during pregnancy may not only mediate experience of stress, anxiety and depression but also increase the likelihood that women will utilise services for prenatal care (Elbourne et al, 1989; Norbeck & Anderson, 1989). It seems that spousal support may be particularly important in this regard. In comparison with other members of the family, spousal support during pregnancy is known to be a better predictor of

prenatal care (Dunkel-Schetter et al, 1996). In addition, a number of studies have shown that social support may have a beneficial impact on the performance of lifestyle behaviours during pregnancy (Collins et al, 1993; Cutrona & Troutman, 1986; Oakley, 1988; Pagel et al, 1990; Turner et al, 1990; de Vries & Bachbier, 1994; Zweig et al, 1988).

Some types and sources of social support may lead to better pregnancy outcomes and subgroups of women may respond differently to social support (Dunkel-Schetter et al, 1996; Oakley 1988, 1993; Oakley et al, 1990). For example, teenagers may be especially responsive to prenatal social support. Regardless of age, however, tangible and emotional resources are most likely to be beneficial during pregnancy whereas the benefits of informational support may depend on the provider and context in which it is offered (Collins et al, 1993; Norbeck & Tilden, 1983). With regard to perinatal health, the quantity of prenatal support has been associated with higher Apgar scores, better progress in labour and increased birth weight (Collins et al 1993; Oakley 1988, 1993; Oakley et al, 1990). In contrast, maternal satisfaction with support during pregnancy seems to be a predictor of postpartum psychological wellbeing. Nevertheless, it is important to note that social support during pregnancy is not always be beneficial (Norbeck & Anderson, 1989).

A range of authors have examined the impact of implementing social support interventions during pregnancy (Bryce et al 1991; Elbourne et al 1987; Heins et al 1987, 1990; Herron et al 1981; Lidderdale & Walsh 1998; Lovell et al, 1987; Oakley 1988; Oakley et al, 1990). Such interventions have generally involved the provision of emotional and informational support. Although some interventions have been more successful than others, many benefits have been reported (Dunkel-Schetter et al, 1996). These studies have demonstrated evidence of more favourable birth outcomes and improved perinatal health, such as increased birth weight, lower perinatal mortality and less use of obstetric technology in labour, particularly epidural and induction techniques. There is evidence to suggest that prenatal social support may lead to better health habits and higher levels of satisfaction with maternity care.

### ***Social support during labour & delivery***

Dunkel-Schetter et al (1996) suggest 'the presence of a supportive person during labour and childbirth seems to have an unambiguously and consistently

positive effect on perinatal outcomes' (pg 383). Support for this position comes from a range of sources. In comparison with normal hospital births, for example, homebirth statistics have provided clear evidence of fewer perinatal complications, less use of pain-relieving medication, higher maternal satisfaction and improvements in postpartum psychological wellbeing (AIMS, 1984; Donley, 1986; Lucas, 1983; Kitzinger, 1979; Nash, 1987; Nicol, 1987; Runnerstrom, 1969; Tew, 1998). In New Zealand and overseas, attendance by midwives, rather than doctors, during labour and delivery has been shown to have a favourable influence on both qualitative and quantitative aspects of maternal and infant perinatal outcome (Guilliland, 1998; McGregor 1996; Oakley & Houd, 1990; Pairman, 1998).

However, the weight of evidence for social support during labour and delivery comes from a series of controlled trials. In particular, various studies have shown that the mere presence of supportive person during labour can serve as a mechanism for improving perinatal outcome (Campero et al, 1998; Sosa et al, 1980; Klaus et al, 1986; Kennell et al, 1991). In comparison with control group outcomes, a doula present in the delivery room has been associated with shorter duration of labour, lower rates of obstetric technology, fewer postpartum complications and better mother-infant interactions<sup>49</sup>.

Others have shown that the presence of a birth partner during labour: either a spouse, family member or friend can increase tolerance for pain as well as persistence in the use of coping strategies and have a favourable effect on maternal quality of childbirth perceptions (Bennett et al, 1985; Bondas-Salonen 1998; Davenport-Slack & Boylan, 1974; Doering et al, 1980; Henneborn & Cogan, 1975; Norr et al, 1977; Tanzer & Block, 1976; Waldenstrom, 1999).

Nevertheless, a number of findings suggest a spouse or family member may not be the best birth partner (Bertsch et al, 1990; Kennell et al 1991). In comparison with a doula, for example, spouses and family members appear to spend less time with labouring women and are more likely to provide both intermittent and/or lower quality support. The presence of a spouse may also serve to increase the intensity of maternal birth pain.

<sup>49</sup> The term doula refers to a supportive companion during labour and delivery.

## **Culture**

An understanding of the role which culture, and/or ethnic identity, may play as a mediator of childbirth experience is gained from a number of sources. In the first instance, there is a good body of evidence to suggest that cognitive appraisal processes during pregnancy and childbirth, may differ between cultural groups. In particular, Cheung (1994) has provided a powerful example of the manner in which cultural factors may influence maternal tolerance for birthpain and, thus, the propensity to accept or request medicalised pain-relief in labour. Indeed, culture may not only be an influential determinant of attitudes to pregnancy, birthpain, technology and motherhood but may also shape the extent to which feelings of fear or anxiety are associated with pregnancy and childbirth (Davis-Floyd, 1994; Haire & Haire, 1972; Jordan, 1978; Mander, 2000; Mauger, 1996; Monk, 1996; Cheung, 1994; Zborowski, 1952).

Consequently, it is clear that maternal use of coping strategies and social support during pregnancy, childbirth and after delivery may vary between cultures (Chalmers, 1993; 1996; Dunkel-Schetter et al, 1996; Monk, 1996; Rice, 1999; Scopesi et al, 1997; Small et al, 1999). During pregnancy, for example, such differences have been shown to impact on the quantity, source and types of social support as well as the way in which women cope with pregnancy and prepare themselves for childbirth. During labour, culture has been shown to have an impact on maternal desire to participate in decision-making processes, the use of obstetric intervention, the likelihood of spousal attendance and whether women will seek other forms of social support. Postpartum differences in the cognitive appraisal process, such as maternal attitude towards quality or satisfaction perceptions, maternal-infant bonding behaviour and the use of coping strategies are also evident.

Rather than romanticize seemingly traditional birth practices, or dictate which approach is clinically better, a number of authors have emphasized the need for a more sophisticated understanding of cultural differences in the use of psychosocial processes which may mediate the quality of childbirth experience (Chalmers, 1996; Dunkel-Schetter et al, 1996; Davis-Floyd, 1994; Monk, 1996). As Chalmers (1996) suggests, the challenge appears to lie in “sifting the wheat, in both world-views, from the chaff” (pg 21).

## **Chapter Five**

### **Te Whaiao**

#### *Māori childbirth knowledge*

This chapter reviews the knowledge-base which underpinned an understanding of Māori pregnancy and childbirth issues during the period under study. It is presented in four main sections. The first section describes Māori fertility patterns and the ways in which this differed from non-Māori. The second section examines the health status of Māori women at the main ages of reproduction. The third section consolidates various sources of knowledge on complications during pregnancy and childbirth. And the last section reviews the research literature which informed debate on Māori childbirth experience when recruitment for this study took place.

The data in this chapter differs from that which is currently available in a number of important ways. More specifically, the profiles are based on data collected prior to not only the introduction of self-ethnicity classification procedures but also the adoption Australian coding standards for classifying national health data and the establishment of a maternity system based on the delivery of services by lead maternity carers. In addition, the profiles on complications during pregnancy and childbirth have been developed from data purchased prior to the introduction of Privacy Act amendments due to which it is no longer possible to access, or purchase, national health data without ethics approval from the Regional Health Authority of origin. The profiles presented in this chapter have, therefore, captured an interesting period in Māori maternity history. In general, however, this chapter aims to provide a foundation for locating the objectives of this thesis within the knowledge-base on Māori childbirth experience.

During the period under review, Māori ethnicity, in vital and health statistics, may have been grossly under-estimated (Durie, 1994; Kilgour & Keefe, 1992; Pool, 1991; Rolleston, 1989; Sceats, 1988; Walker, 1987). In the early 1990s, however, roughly half a million Māori resided in New Zealand. As a

proportion of the total population, the number of Māori had expanded from seven to fifteen percent since 1960 (Department of Statistics, 1992, 1994a). The majority of Māori lived in the northern half of the North Island, particularly the Auckland, Waikato and Bay of Plenty regions. Over eighty percent of Māori have been urban dwellers since the early eighties with most living in the main urban areas. In comparison with non-Māori, however, Māori were more likely to reside in minor urban and rural areas. The majority of Māori lived outside their *iwi takiwa* or the region in which their iwi is located (Wauchop & Dyll, 1993; Pomare et al, 1995). Within the four Regional Health Authorities, roughly twenty percent of the Midland population were of Māori ethnicity compared with thirteen percent in the Northern and Central regions and six percent in the Southern region (Wauchop & Dyll, 1993).

## **Fertility**

In the early nineties, around 110,000 Māori females were at the main ages of reproduction with forty-two percent aged 15-24 years and fifty-eight percent in the 25-44 age bracket (Department of Statistics, 1992). Māori women contributed around twelve percent of all livebirths (Department of Statistics, 1994b). During this period, the annual rate of Māori population growth was around 1.9 percent at almost threefold the rate for the total population (Department of Statistics, 1994b). The higher rate of Māori population growth was attributed to the increased fertility of a younger population and the larger proportion of Māori women at reproductive ages (Pomare & de Boer, 1988).

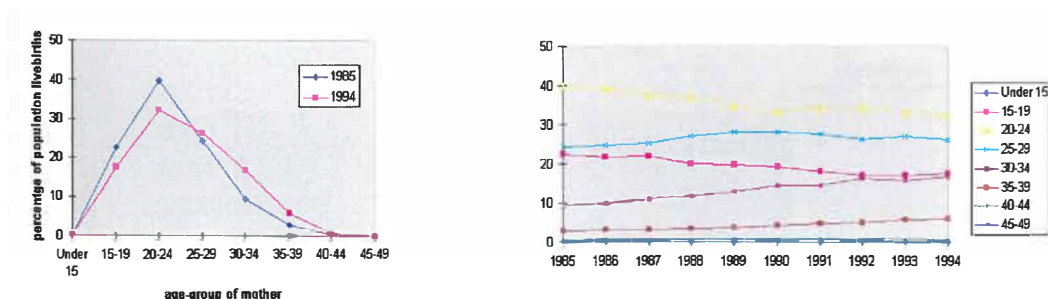
Total fertility rates (TFR) provide an indication of actual family size and the average number of children a woman is expected to have during her lifetime. With the exception of two baby-booms, during the Great Depression and World War II, non-Māori had experienced a gradual and gentle decline in fertility, which is typical of people with European origins. Māori, in contrast, had maintained a consistently high fertility rate, at roughly six births per woman, until the late sixties but, by 1982, the Māori TFR had plummeted to 2.3 births per women (Department of Statistics, 1994b; Pool & Pole, 1987). Such a fertility transition resembles that found in most third world countries but Māori declines are among the most rapid on international record (Pool & Pole, 1987; Sceats, 1985). By 1990, the Māori

TFR at 2.29 was slightly higher than that of non-Māori but both populations had TFRs which hovered around the replacement rate of 2.1 births per woman.

Such figures suggested similarity in Māori and non-Māori fertility patterns. However, the crude birth rate (CBR) provided clear evidence of difference. A CBR estimates the birthrate per 1,000 female population. Between 1962-1991, the Māori CBR fell from 43.41 to 21.66 whereas for non-Māori it dropped from 26.16 to 16.91 births per 1,000 women (Department of Statistics, 1994b).

Records on the age of non-Māori mothers at the time of childbirth date back to 1915 but information on Māori maternal age did not become available until 1962. It is clear, however, that Māori fertility rates during the 1960s were considerably higher than non-Māori at all maternal age-groups (Department of Health, 1983). During the sixties, Māori and non-Māori fertility patterns were most similar among women aged 20-24 years although Māori rates almost doubled those of non-Māori. Within both populations, this was the age-group of peak fertility. In the early nineties, peak fertility was found among non-Māori women aged 25-29 years and those aged 30-34 years contributed the second highest proportion of their population births. Among Māori, however, the age-group of peak fertility continued to be 20-24 years, albeit at a much lower level than in the sixties, although there was little difference between the rates for women aged 20-24 and 25-29 years.

**Figure 5.1: Māori age-specific fertility rates during 1985 and 1994**



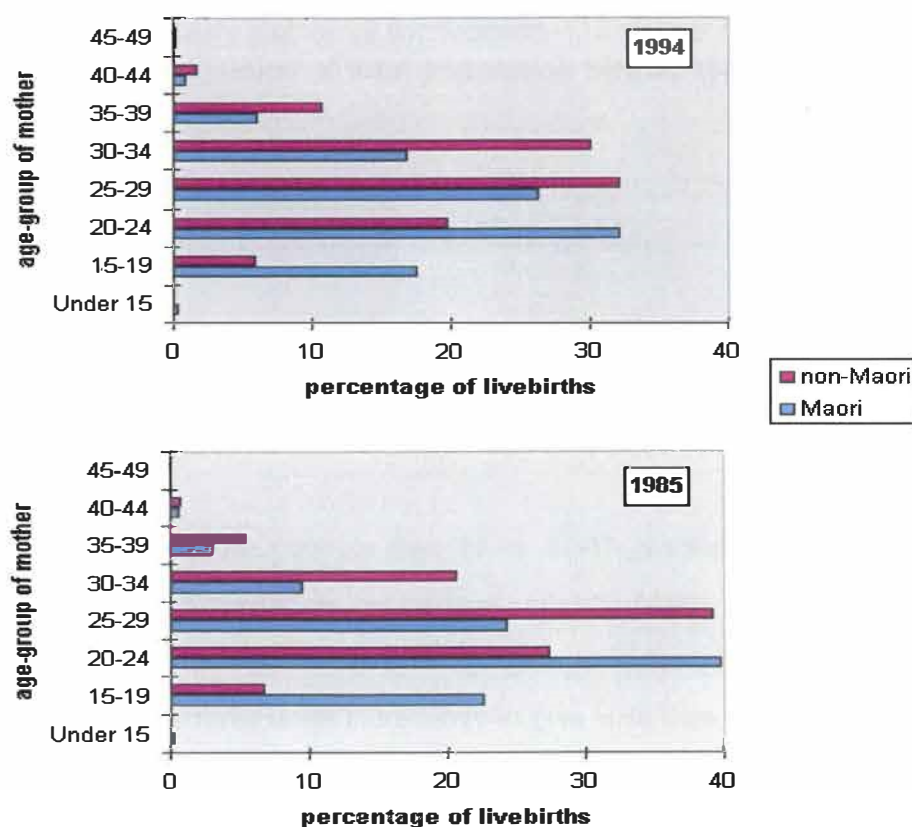
Source: Department of Statistics, 1995

Figure 5.1 compares Māori age-specific fertility rates during 1985 and 1994. In general, the age of peak fertility was younger and teenage fertility rates were considerably higher. A general trend towards childbirth at older age-groups is evident. In this brief period, the proportion of births to women aged 25-40 years increased while those to women aged 15-24 years reduced. There was little

change in the structure of age-specific fertility rates during this period. Women aged 20-24 years provided the highest proportion of births followed, consecutively, by women aged 25-29, 15-19, 30-34, 35-39 and 40-44 years. Women aged less than 15 and 45 years or more contributed the lowest proportion of births but the declining rate for women aged 15-24 years contrasted sharply with increasing rates among those aged 25-39 years. The fertility rates of women aged 15-19 and 30-34 years had converged.

Figure 5.2 compares Māori and non-Māori age-specific fertility as a proportion of the total births for each population in 1985 and 1994. During both periods, the proportion of births to Māori women less than 25 years exceeded those of non-Māori but non-Māori fertility rates were higher at older age-groups. Such profiles contrast with the sixties, when Māori fertility exceeded non-Māori rates at all maternal age-groups (Department of Health, 1983).

**Figure 5.2: Age-specific fertility as a proportion of the total births for Māori and non-Māori populations during 1985 and 1994**



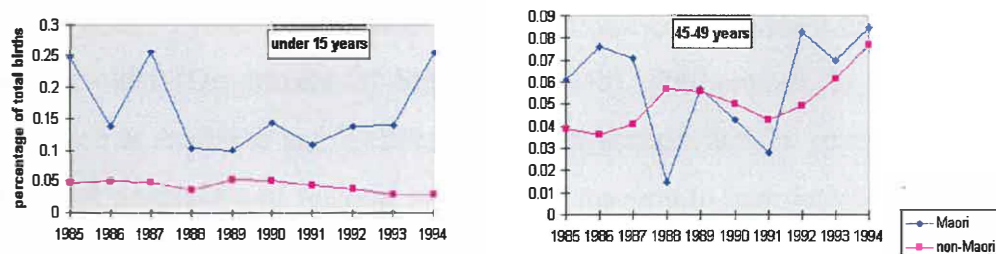
Source: Department of Statistics, 1995



For both populations, the proportion of births to women at older age-groups increased. Among Māori, for example, the proportion of births to women aged 25-39 years increased from thirty-six to forty-nine percent. However, Māori women less than 24 years contributed fifty percent of their population births in 1994. In contrast, non-Māori women, at this maternal age-group, contributed twenty-six percent of their population births.

Age-specific fertility differentials provide another way to view differences between Māori and non-Māori patterns. Among women aged 25-29 years, for example, the differential was clearly decreasing. In 1985, the differential between women at this maternal age-group was fourteen percent but by 1994 it had reduced to five percent and both groups provided around thirty percent of their population births. Among women aged 15-19 years, there was little change in the proportion of births contributed by non-Māori women but reduced fertility among Māori women, at this age-group, had narrowed the differential from seventeen to twelve percent. Despite reduced fertility rates among women aged 20-24 years in general, the differential between Māori and non-Māori remained around twelve percent.

**Figure 5.3: Fertility patterns for women <15 years or 45-49 years by ethnicity and proportion of total population births, 1985-1994**



Source: Department of Statistics, 1995

In 1994, women younger than 15 or 45-49 years contributed fewer than one percent of all livebirths. In comparison with non-Māori, however, higher rates were evident for Māori women at both age-groups. Indeed, Māori women younger than 15 years were three times more likely to give birth than non-Māori in this age-group. Furthermore, Māori women aged 45-49 years were two times more likely to give birth than their non-Māori counterparts (Department of Statistics, 1994b). Figure 5.3 presents the fertility rates of women at these age-groups as a proportion of total population births in 1985 and 1994. Among Māori, women younger than 15 years contributed a greater proportion of births than those aged 45-49 years but

little difference was evident between the rates for non-Māori women at these age-groups. The proportion of births to Māori women at both age-groups appeared to be on the rise. Among non-Māori, in contrast, a gradual reduction in the number of births to women <15 years was evident whereas the rates for women aged 45-49 years increased.

Historically, increased fertility have been associated with women who are married and/or live in either the North Island or rural regions (Prior, 1968). Khawaja (1985) has also provided evidence of an inverse relationship between socio-economic status and average family size.

Since the early nineties, data on the place-of-birth has been classified by the regional authority. It is no longer possible, therefore, to distinguish between rural and urban fertility patterns without specific study. Nevertheless, a number of indicators suggest population density may be a factor which influences fertility behaviour. During the early nineties, for example, women in low density Gisborne displayed an average TFR of 2.7 births per woman while women in the more densely populated regions of Wellington and Canterbury had a TFR below the replacement level (Department of Statistics, 1994b). Such findings were generally indicative of higher fertility in low density areas. By maternal age-group, however, fertility rates were inversely related to the size of regional authority in women younger than 30 years but a positive linear relationship was evident for women 30 years or older (Department of Statistics, 1994b). Furthermore, in high density areas, such as Auckland and Wellington, women younger than 30 years contributed the lowest proportion of regional births but in medium to low density areas, such as Manawatu-Wanganui, Bay of Plenty and Northland, those at this maternal age-group contributed the highest proportion of births. Such findings support the view that working women in main urban areas delay childrearing (Department of Statistics, 1994a; Pool & Sceats, 1981; Ritchie & Ritchie, 1984; Roke, 1987). In medium or low density areas, the higher fertility rates of younger women may be attributable to greater proportions of young Māori women.

Before leaving this topic, it is of interest to consider various factors which are known to fertility patterns. Throughout the world, the link between marriage and fertility has weakened (Murchie 1984; O'Neill, 1985; Pomare & de Boer, 1988). In New Zealand, for example, the proportion of nuptial births reduced from eighty-three to sixty-one percent between 1976 and 1994. In 1994, therefore,

roughly forty percent of all livebirths were ex-nuptial (Department of Statistics, 1994b). Among Māori, roughly one-third of all births were ex-nuptial in the seventies but by the early nineties, this figure had climbed to seventy-seven percent (Department of Statistics, 1996). In comparison, thirty-six percent of all non-Māori births were ex-nuptial in 1991. Although many unmarried mothers live in stable de-facto relationships, there is concern that this may not be the case for Māori. By the early nineties, an excessive and increasing trend towards sole-parenting was evident among Māori (Cunningham, 1993; Pomare & de Boer, 1988). There is an increased likelihood that Māori ex-nuptial births are not only to sole-parents but also to teenage mothers and both factors have been associated with socio-economic and material disadvantage

In 1990, there was little to describe Māori use of contraceptive techniques<sup>50</sup>. Various studies, however, had suggested that women who were young and/or poor may be more likely to use the pill (Paul et al, 1989; Pomare et al, 1995). In comparison with other groups, Sceats (1988) had shown that Māori were less likely to use contraception. Among those who did seek contraception advice, it seems depo-provera was more likely to be recommended when women were of Māori ethnicity (Bunkle, 1983; Harris, 1994; Stone, 1987; personal communications, Glyns Wood, Family Planning Association, Hamilton on 25 July 1996). Without prior consent, Māori women during the eighties and early nineties, were known to be given depo-provera injections as a matter of routine after discharge from obstetric units (Bunkle, 1983; Harris, 1994).

The trend towards sterilisation as a method of contraception, for both males and females, has been evident for many years (Paul et al, 1986, 1989). In the early nineties, around forty percent of all couples in New Zealand lived in a sterile union and vasectomy was the more popular technique (Paul et al, 1989; Sparrow, 1989a, Ministry of Women's Affairs, 1989). However, various authors have shown that women of lower socio-economic status are more likely to be sterilised for contraceptive purposes (Paul et al, 1989; Pomare et al, 1995). In comparison with non-Māori, it seems Māori were three times more likely to have a tubal ligation and they also tended to have the operation younger (Pomare et al, 1995; Ministry

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<sup>50</sup> At the time of study, a major research project on contraception use in New Zealand was underway (Pool et al, 1999)

of Women's Affairs, 1989)<sup>51</sup>. Among men, vasectomy was less popular for Māori and non-Māori had much higher rates.

By international standards New Zealand's abortion rates, in the early nineties, were only exceeded by the United States, Sweden, Australia and Japan (Abortion Supervisory Committee, 1995; Department of Statistics, 1994b; Ministry of Women's Affairs, 1990). The majority of terminations were to women who had never been married, had no previous issue and were aged between 20-29 years. In 1994, at least seventy percent of all terminations were to women aged 20-29 years and twenty percent were to teenagers (Abortion Supervisory Committee, 1995). In 1988, Sceats showed that Māori abortion rates were considerably higher than non-Māori at all age-groups but procedures to classify abortion by ethnicity were not introduced until 1991. Between 1991-1995, the percentage of abortions to women of Māori ethnicity increased from fourteen to nineteen percent (Abortion Supervisory Committee, 1995). In 1991, Māori women terminated more than a thousand pregnancies and this excludes the greater proportion of abortions which took place at independent clinics (Wauchop & dyall, 1993). In relative terms, this figure represents at least fifteen percent of Māori conceptions in 1991.

### **Māori reproductive health status**

The dramatic improvements in Māori life-expectancy since the 1950s have been attributed to decreased mortality from infectious diseases (Pomare et al, 1995). Degenerative disorders have been the main cause of Māori morbidity for a number of years and the manner in which such disorders may be influenced by poor living conditions, socio-economic disadvantage and detrimental lifestyle behaviours has been well demonstrated (Durie, 1998; Mackay, 1985; Prior 1968; Pomare, 1980; Pomare & de Boer, 1988; Pomare et al, 1995; Public Health Commission, 1994a).

### ***Infant morbidity and mortality***

Infant morbidity and mortality profiles are a sensitive indicator of maternal health status (Pomare & de Boer ,1988; Pool, 1991; Sceats, 1984; Tew, 1998). Male infants generally have higher rates of morbidity and mortality than females but, regardless of gender, Māori infant health is considerably worse than non-Māori. Although Māori infant mortality declined from 69.7 in 1950 to 15.1 deaths

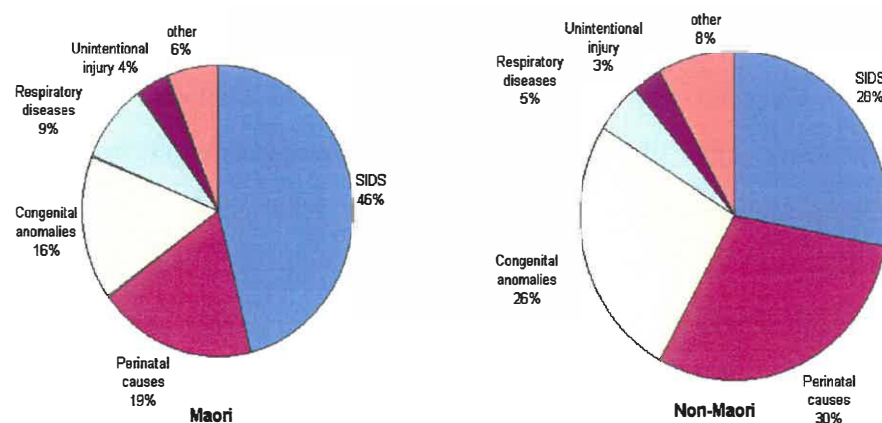
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<sup>51</sup> This is likely to reflect the earlier onset of childbearing and the younger age for desired family size.

per 1000 livebirths in 1990, non-Māori rates reduced from 22.7 to 7.4 during the same period (Department of Health, 1991a). In the early nineties, hospital admissions for Māori infants trebled those for non-Māori (Pomare et al, 1995). Roughly six percent of Māori births were premature, one percent were extremely premature and up to twenty percent of Māori newborns experienced major health problems (Wauchop & Dyll, 1993). Of Māori infants born in 1992, less than half were discharged as healthy newborns and eighteen percent were admitted to hospital during their first year of life (Pomare et al, 1995).

In 1992, Māori excess was evident in every leading cause of hospitalisation for infants under 1 year. Māori admissions for acute respiratory diseases and intentional injuries were five-fold the rates for non-Māori (Public Health Commission, 1994a). Furthermore, Māori infants experienced twice the rate of admissions for disorders relating to short gestation or low birthweight; diseases of the digestive system; infectious or parasitic diseases and unintentional injury (Public Health Commission, 1994a).

**Figure 5.4: Major causes of infant death by ethnicity as a proportion of total infant deaths for each population, 1987-1991**



Source: Pomare et al, 1995

Figure 5.4 presents the major causes of infant death by ethnicity as a proportion of the total infant deaths for each population during 1987-1991. During this period, Māori experienced a higher proportion of deaths from Sudden Infant Death Syndrome (SIDS) and respiratory diseases (Pomare et al, 1995). Indeed, the total rate of Māori infant death was twice that of non-Māori. By the ratio for

Māori to non-Māori infant mortality rates during the quinquennial periods 1980-84 and 1987-91, the gap between these groups had widened when the cause of death was SIDS, congenital anomalies, unintentional injury or violence (Pomare et al, 1995).

### Infant deaths by component periods

Perinatal mortality refers to late fetal deaths, or stillbirths of at least 28 weeks gestation, and early neonatal deaths, or the death of a liveborn infant within seven days of birth. Around two percent of infant deaths occur are perinatal. Neonatal mortality refers to the death of an infant during the early or late neonatal periods, that is, between seven to twenty-eight days after birth. In general, the rate of late neonatal mortality is half the rate of early neonatal deaths. Post-neonatal mortality refers to deaths which occur when an infant is between 1-11 months old. The majority of infant deaths are post-neonatal. During 1987-1991, for example, seventy percent of Māori, and fifty percent of non-Māori, infant deaths were post-neonatal (Pomare et al, 1995).

Since 1950, perinatal mortality rates have declined by more than eighty percent and New Zealand rates are low by OECD standards (Public Health Commission, 1994)<sup>52</sup>. Until recently, Māori late fetal mortality was considerably higher than non-Māori but little difference between these groups has been evident since the mid-1980s. Within the neonatal period, New Zealand's rate of early neonatal death is relatively low but late neonatal mortality rates are among the highest in the world (Public Health Commission, 1994a). In 1993, a trend towards increasing late neonatal mortality was evident among Māori. New Zealand's post-neonatal mortality rates are also among the highest of OECD countries (Public Health Commission, 1994a). During the fifties, Māori post-neonatal rates were roughly six times higher than those of non-Māori. Over the last few decades, Māori have experienced considerable declines in post-neonatal mortality whereas non-Māori have not.

Table 5.1 displays infant mortality rates by component periods and ethnicity during 1989-1993. Little difference was evident between these groups during the late fetal, early neonatal and perinatal periods. The higher rate of non-Māori late fetal death gave this group a slightly higher rate of perinatal mortality. However, Māori excess was clearly evident during the late neonatal and post-neonatal

periods. Indeed, Māori post-neonatal mortality rates were three times those of non-Māori. By the ratio of Māori to non-Māori post-neonatal mortality rates during the quinquennial periods 1980-84 and 1987-91, the gap between these groups had widened (Pomare et al, 1995).

**Table 5.1: Infant mortality by component periods and ethnicity, 1989-1993**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
Late fetal deaths	131	3.7	1096	4.2
Early neonatal	119	3.4	833	3.2
Perinatal	250	7.1	1929	7.4
Late neonatal	50	1.4	217	0.8
Post-neonatal	362	10.3	889	3.4
Infant	531	15.1	1939	7.4

Rate per 1000 livebirths,  
Source: Public Health Commission, 1994

### Maternal age

Table 5.2 presents infant mortality by component periods, maternal age-group of highest risk and ethnicity during 1988-1991. Among Māori, women aged 35 years or more had the greatest risk of perinatal, late fetal and/or early neonatal death whereas teenagers were at most risk of post-neonatal death. In contrast, non-Māori teenagers were at the greatest risk of perinatal, early neonatal and perinatal mortality. By maternal age, the risk of late fetal and early neonatal death was similar for both populations but childbirth was clearly safest for women aged 25-34 years.

**Table 5.2: Infant mortality by component periods, maternal age-groups of highest risk & ethnicity, 1988-1991**

	Māori	non-Māori
Perinatal	35+ then 20-24	teenagers then 35+
late fetal	35+ then teenagers	35+ then teenagers
early neonatal	35+ then 20-24	teenagers then 35+
post-neonatal	teenagers then 20-24	teenagers then 20-24

Source: Department of Health, 1988, 1989, 1990 &-1991b

### Birthweight

Table 5.3 presents cumulative rates of perinatal and post-neonatal mortality by birthweight and ethnicity during 1988-1991. For both populations, the

<sup>52</sup> Tew (1998) has provided a comprehensive discussion on the causes of perinatal mortality.

likelihood of infant survival clearly increased with birthweight. During the perinatal period, non-Māori excess was evident at all birthweights except when infants weighed more than 3500 grams. In contrast, Māori excess was evident for all birthweights during the post-neonatal period. In the late fetal period, Māori infants weighing less than 3500 grams had a lower chance of survival than non-Māori. During this period, non-Māori rates of infant mortality decreased for all birthweights whereas late fetal and early neonatal deaths for Māori infants weighing less than 2500 grams increased.

**Table 5.3: Cumulative rates of perinatal and post-neonatal mortality by component period, birthweight & ethnicity, 1988-1991**

	Māori			non-Māori		
	< 2500 gms	2500-3500 gms	> 3500 gms	< 2500 gms	2500-3500 gms	> 3500 gms
late fetal	136.1	8.9	1.8	180.4	12.7	5.3
early neonatal	121.1	5.7	3.5	179.3	6	2.4
post-neonatal	95.3	36.1	33.1	67	16.1	9.5

late fetal death rates calculated per 1000 total births, early neonatal & post-neonatal rates calculated per 1000 live births  
Source: Department of Health, 1988, 1989, 1990 & 1991b

## Gestation

Table 5.4 displays the cumulative rates of infant mortality by gestational age and ethnicity during 1988-1991. In comparison with non-Māori, the risk of late fetal mortality was greater, among Māori, when infants were <30 weeks or between 38-39 weeks gestation. During the early neonatal period, risk of infant death was greater for Māori at 38-39 weeks gestation.

**Table 5.4: Cumulative infant mortality rates by gestation & ethnicity, 1988-1991**

gestational age (weeks)	Māori			non-Māori		
	late fetal	early neonatal	post-neonatal	late fetal	early neonatal	post-neonatal
under 30	298.7	945.3	165.1	272.1	1135.3	149.8
30-34	210.8	85.9	135.1	274.2	100.3	74
35-37	37.3	18.6	66.2	63.2	25.1	32.5
38-39	13.6	4.8	35.5	12.5	4.4	17
40+	4.6	3.6	32.8	6.5	4	11.5
total	16.8	14.5	43.6	18	13.7	17

late fetal death rates calculated per 1000 total births, early neonatal & post-neonatal rates calculated per 1000 live births  
Source: Department of Health, 1988, 1989, 1990 & 1991b

In the post-neonatal period, the risk of Māori infant mortality was greater at all gestations. During this period, Māori rates of perinatal mortality increased at most gestational ages whereas they mostly decreased for non-Māori. In particular, the Māori rate of late fetal mortality at 30-34 weeks climbed from 55.2 to 76.9 deaths per 1000 total births (Department of Health, 1988, 1989, 1990 & 1991b).



In addition, Māori rates of early neonatal mortality at 30-34 weeks increased from 6.1 to 25.7 deaths per 1000 livebirths (Department of Health 1988, 1989, 1990 & 1991b).

### ***Causes of infant death***

During 1988-1991, Māori had slightly a higher rate of late fetal mortality and this was primarily due to higher rates of death from conditions originating in the perinatal period. Within this category, a greater proportion of Māori deaths were due to ill-defined conditions and unspecified congenital anomalies. During this period, the proportion of Māori late fetal deaths due to conditions originating in the perinatal period increased from seventy-eight to ninety-one percent whereas the number of deaths from congenital anomalies decreased (Department of Health 1985b, 1988, 1989, 1990 & 1991b).

**Table 5.5: Main causes of early neonatal mortality by rate & ethnicity  
1988 -1991**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
Conditions originating in perinatal period	63	2.27	388	1.85
- short gestation & low birthweight	22	0.8	105	0.5
- intrauterine hypoxia/birth asphyxia	7	0.3	31	0.1
- respiratory distress syndrome	16	0.6	101	0.5
- respiratory conditions of fetus/newborn	10	0.4	59	0.3
- other & ill-defined conditions	2	0.07	4	0.02
Congenital anomalies	34	1.22	245	1.17
- anencephalus & similar anomalies	2	0.07	13	0.06
- bulbus cordis & cardiac septal closure	6	0.22	18	0.09
- anomalies of the heart	1	0.03	32	0.15
- anomalies of respiratory system	8	0.3	32	0.15
- musculoskeletal anomalies	3	0.1	28	0.13
- chromosomal anomalies	5	0.2	41	0.2
Other	3	0.1	29	0.14
<b>Total</b>	<b>100</b>	<b>3.6</b>	<b>662</b>	<b>3.16</b>

Rate per 1000 livebirths

Source: Department of Health 1988, 1989, 1990, 1991b

Table 5.5 compares the causes of early neonatal mortality by rate and ethnicity during 1988-1991. In general, sixty percent of infant deaths were due to disorders resulting from short gestation, unspecified low birthweight and/or respiratory distress. The number of deaths from short gestation and/or low birthweight increased for both populations (Department of Health 1985b, 1988, 1989, 1990 & 1991b). However, Māori had higher rates of death from conditions originating in the perinatal period and congenital anomalies.

Since 1985 there has been little change in non-Māori early neonatal deaths from conditions originating in the perinatal period or congenital anomalies. For Māori, the proportion of early neonatal deaths due to conditions originating in the perinatal period reduced but the rate of death from congenital anomalies more than doubled. Indeed, congenital anomalies accounted for thirty-six percent of Māori early neonatal deaths in 1991. Within this category, Māori deaths from intrauterine hypoxia, fetal haemorrhage, cardiac septal closure and anomalies of the respiratory system increased (Department of Health 1985b, 1989, 1989, 1990 & 1991b). In contrast, non-Māori rates of early neonatal mortality for most congenital anomalies decreased (Department of Health, 1991b).

**Table 5.6: Main causes of late neonatal mortality by rate & ethnicity  
1988 -1991**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
Conditions originating in perinatal period	7	0.25	55	0.26
- <i>birth trauma</i>	0	0	7	0.03
- <i>respiratory distress syndrome</i>	3	0.1	14	0.07
- <i>respiratory conditions of fetus/newborn</i>	1	0.04	11	0.05
- <i>disorders of the digestive system</i>	0	0	11	0.05
Congenital anomalies	10	0.36	79	0.3
- <i>bulbus cordis &amp; cardiac septal closure</i>	1	0.04	26	0.12
- <i>anomalies of the heart</i>	3	0.11	12	0.06
- <i>anomalies of circulatory system</i>	1	0.04	15	0.07
- <i>chromosomal anomalies</i>	2	0.07	11	0.05
Sudden Death, cause unknown (SIDS)	11	0.4	20	0.09
Other	3	0.1	19	0.09
<b>Total</b>	<b>31</b>	<b>1.12</b>	<b>173</b>	<b>0.8</b>

Rate per 1000 livebirths

Source: Department of Health 1989, 1989, 1990, & 1991b

Table 5.6 displays the main causes of late neonatal mortality by rate and ethnicity during 1988-1991. Congenital anomalies and SIDS were the leading causes of death. In comparison with non-Māori, Māori had experienced slightly higher rates of death from congenital anomalies, conditions originating in the perinatal period and respiratory distress syndrome. However, the leading cause of Māori late neonatal death was SIDS. At four times the rate of non-Māori, this cause accounted for thirty-five percent of Māori deaths during this period. Between 1988-1991, Māori late neonatal deaths from conditions originating in the perinatal period and congenital anomalies increased since 1988 but there was been little change in the rate of death from SIDS.

Table 5.7 compares the main causes of post-neonatal mortality by rate and ethnicity during 1988-1991. Throughout this period, SIDS accounted for fifty-eight percent of all post-neonatal deaths and thirteen percent were due to congenital anomalies (Public Health Commission, 1994a). In respective order, the main causes of Māori post-neonatal death were SIDS, diseases of the respiratory system, congenital anomalies, unintentional injuries and acute respiratory infections. Throughout 1988-1991 Māori had excessive rates of post-neonatal deaths from all causes, except diseases of the nervous system and infectious or parasitic diseases.

**Table 5.7: Main causes of post-neonatal mortality by rate & ethnicity, 1988-1991**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
Sudden death - cause unknown	190	6.9	488	2.3
Congenital anomalies	24	0.9	128	0.6
Diseases of the respiratory system	38	1.4	63	0.3
- <i>pneumonia &amp; influenza</i>	16	0.6	31	0.1
Diseases of the nervous system	3	0.1	28	0.1
Infectious & parasitic diseases	4	0.1	19	0.1
Respiratory conditions of fetus & newborn	7	0.3	17	0.1
Acute respiratory infections	12	0.4	16	0.1
Unintentional injuries	15	0.5	38	0.2
- <i>submersion, suffocation &amp; foreign bodies</i>	9	0.3	16	0.1
<b>Total</b>	301	10.9	878	4.2

Rate per 1000 livebirths,

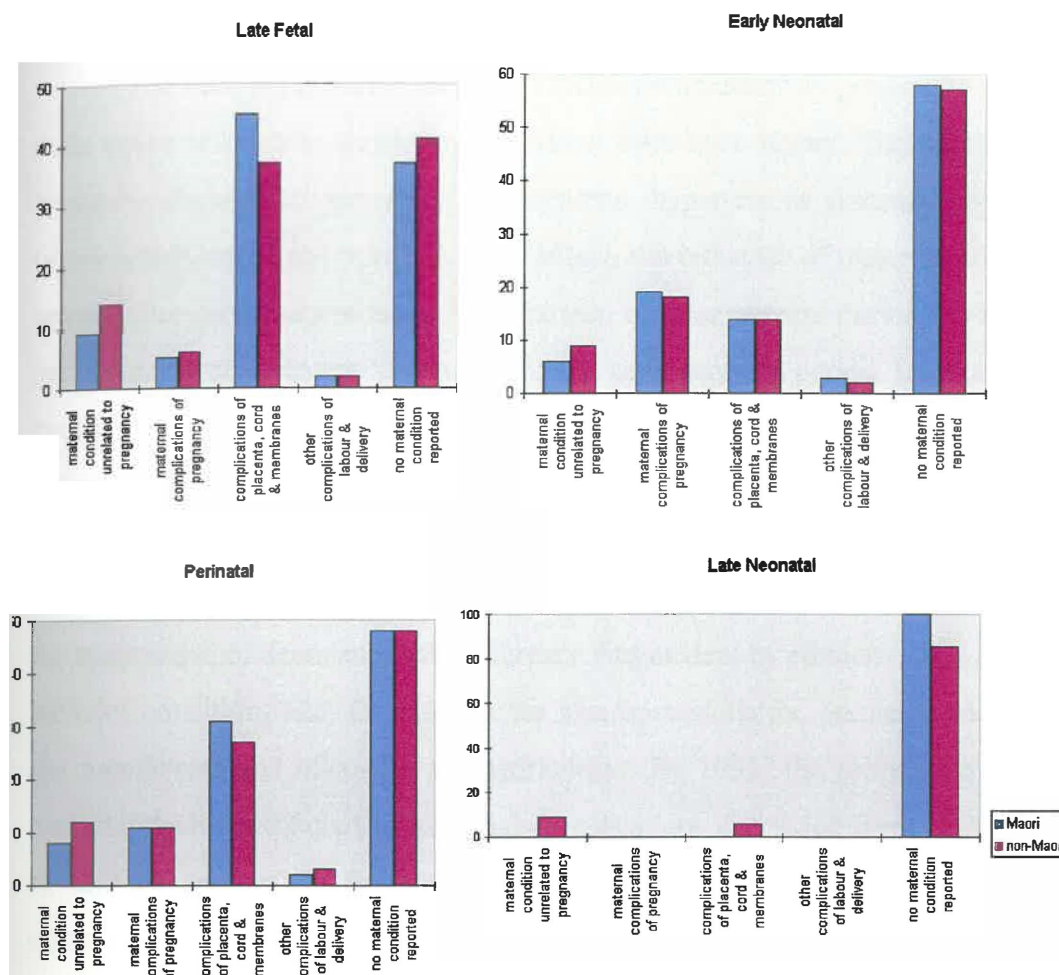
Source: Public Health Commission, 1994a

As a cause of death, SIDS has more influence during the post-neonatal period but Māori rates are ten times those for non-Māori in the late neonatal period. Between 1988-1991, the Māori rate of SIDS showed periods of intermittent increase whereas among non-Māori the rate has halved (Department of Health, 1991b). For both populations, teenagers and infants of low birthweight are at the greatest risk of SIDS but among Māori infants born at 30-34 weeks gestation, the rate of SIDS increased from 24.5 to 35.5 deaths per 1000 livebirths between 1988-1991.

### ***Maternal conditions as a cause of infant death***

In 1985 and again in 1991, the Ministry of Health released somewhat sketchy details of maternal conditions associated with infant mortality during the perinatal and late neonatal periods (Department of Health 1985b & 1991b).

**Figure 5.5: Maternal conditions in perinatal and neonatal mortality by percentage & ethnicity, 1985 & 1991**



Source: Department of Health 1985b, 1991b  
percentages based on sum of 1985 & 1991 figures

Figure 5.5 displays this material for each component period by ethnicity. For both populations, maternal conditions had the greatest impact on late fetal mortality. Among Māori, maternal conditions accounted for sixty percent of late fetal deaths, forty percent of early neonatal deaths and none of the late neonatal deaths. The vast majority of late fetal deaths resulted from complications in the placenta, cord or membranes and Māori experienced a greater proportion of late fetal deaths from this cause. This category includes placenta praevia as well as other forms of placental abnormality, prolapsed cord, compression of the umbilical cord and abnormalities of the chorion or amnion. In 1985, more than half of all Māori late fetal deaths resulted from complications of the placenta, cord and membranes but by 1991 the proportion of Māori late fetal deaths associated with this cause had reduced to thirty-seven percent. Complications of the placenta, cord

and membranes had less impact during the early neonatal period but fourteen percent of Māori and non-Māori early neonatal deaths were associated with this cause.

For both populations, maternal conditions unrelated to pregnancy were the main cause of late fetal death but non-Māori rates were higher. This category, for example, diseases of essential body systems, hypertensive disorders, infection, noxious substances and injury. Among Māori, the influence of maternal conditions unrelated to pregnancy reduced from thirteen to three percent during the late fetal period and twelve percent to zero during the early neonatal period. In contrast, the proportion of non-Māori late fetal deaths due to maternal conditions unrelated to pregnancy hardly changed and early neonatal deaths attributed to this cause increased.

During the early neonatal period, maternal complications in pregnancy were the main cause of death and little difference was evident by ethnicity. This category includes conditions like, for example, an incompetent cervix, premature rupture of the membranes and oligo- or polyhydramnios. By 1991, the proportion of early neonatal deaths attributed to maternal complications decreased from twenty-three to thirteen percent. In the late fetal period, the rate of death from maternal complications in pregnancy increased for both populations and, in 1991, ten percent of Māori late fetal deaths were attributed to this cause.

Among Māori, the proportion of late fetal and early neonatal deaths attributed to other complications of labour and delivery increased. This category includes, for example, malpresentation, malposition, disproportion, abnormal uterine contractions and/or any other condition for which forceps is used. In 1991, four percent of Māori perinatal deaths were attributed to this cause.

On the basis of this information, it seems roughly seventy percent of Māori perinatal and late neonatal deaths could be attributed to maternal conditions during 1985 and 1991. Moreover, Māori mothers were at higher risk of complications in the placenta, cord or membranes but lower risk of complications resulting from maternal conditions unrelated to pregnancy. Infant mortality from these factors was more likely during the late fetal period but both populations experienced an increase in the number of perinatal deaths due to maternal complications during pregnancy, labour and delivery.

Sceats (1984) has drawn attention to endogenous and exogenous causes of infant mortality. As the name implies, endogenous causes refer to the influence of genetic, biochemical, physiological or other intrinsic factor whereas exogenous causes stem from various social, medical, environmental or extrinsic influences to which the baby is exposed, either within the womb or directly. Most endogenous causes of infant mortality have proved responsive to obstetric intervention and comprehensive medical care. Moreover, endogenous factors are generally associated with perinatal mortality while exogenous causes have been more closely linked to post-neonatal death.

The distinction between exogenous and endogenous causes of infant mortality provides an interesting explanation for the current excess in Māori rates of late and post-neonatal death. Sceats (1984), for example, has suggested improved rates of neonatal survivorship, in the face of high risk mortality due to endogenous factors, may be associated with increased risk of mortality from exogenous determinants at older ages. In this way, therefore, effectively exogenous antepartum influences - such as maternal smoking, alcohol use, socio-economic disadvantage and/or nutritional inadequacies - may lead to endogenous complications which are initially alleviated by obstetric expertise but predispose an infant to increased risk of post-neonatal mortality. Others have used similar arguments to explain the cause of SIDS (Geronimus 1986, Gluckman 1988, Mitchell et al 1991, Public Health Commission, 1994).

There is also evidence to suggest that Māori rates of infant mortality may be influenced by the quality of medical care. By Regional Health Authority, for example, Midland had the highest proportion and rate of Māori infant deaths in 1991 (Department of Health 1988, 1989, 1990 & 1991b). By Health Board, however, Auckland, Waikato and the Bay of Plenty had the highest proportions of Māori perinatal, neonatal and post-neonatal death. Such findings are not entirely explained by the distribution of Māori populations.

Table 5.8, compares cumulative infant mortality rates for Māori in the North Island Regional Health Authorities during 1988-1991. Although the density of Māori was highest in Auckland, Māori infant mortality in this district compared favourably with other regions. In the Midland RHA, however, Māori infant mortality rates were excessive. In Taranaki, Māori perinatal and neonatal mortality rates were highest but Waikato figures were also high. In contrast to the general

decline in perinatal mortality within most hospital boards since 1988, Māori perinatal mortality rates increased at all of the Midland facilities. Between 1988-1991, for example, Māori perinatal mortality increased from 5.7 to 9.7 deaths per 1000 livebirths in Waikato and in the Bay of Plenty, the rate increased from 3.2 to 11 deaths per 1000 livebirths. Māori neonatal mortality rates also increased in the Bay of Plenty, Tairāwhiti and Taranaki.

**Table 5.8: Cumulative rates of Māori infant mortality in the North Island, by Regional Health Authority, 1988-1991**

	Perinatal	Neonatal	Post-neonatal
<b>Northern RHA</b>			
Northland	30.2	23.8	30.7
Auckland	30.3	18.9	40.6
<b>Midlands RHA</b>			
Waikato	32.9	25.7	55.5
Bay of Plenty	29.2	17.3	42
Tairāwhiti	26	12.9	29.3
Taranaki	63.2	36.2	37.6
<b>Central RHA</b>			
Hawkes Bay	31.5	16.7	45.5
Manawatu/Wanganui	40.3	17.3	72.9
Wellington	17.2	8.1	35

Source: Department of Health 1988, 1989, 1990, 1991b

In comparison with non-Māori, Māori experienced higher rates of infant mortality in all North Island hospital boards in 1991. In particular, Māori rates were up to ten times higher in Tairāwhiti, Taranaki, Hawkes Bay and Manawatu/Wanganui. In contrast to the general decline of non-Māori infant mortality rates in all North Island hospital boards since 1988, Māori rates increased in the Bay of Plenty, Tairāwhiti, Hawkes Bay, Taranaki, Manawatu/Wanganui and Wellington (Department of Health 1988, 1989, 1990 & 1991b).

### ***Maternal mortality***

As a proportion of all Māori deaths, the figures for women aged 15-44 years reduced from twenty to sixteen percent between 1979 and 1990. Among non-Māori during the same period, this figure was never more than four percent. Such disparity draws attention to the disadvantaged health status of Māori women at the main ages of reproduction.

**Table 5.9: Mortality rates for women in the main maternal age-groups by ethnicity 1975, 1985 & 1993**

	non-Māori			Māori		
	15-24	25-34	35-44	15-24	25-34	35-44
<b>1975</b>	5.2	7.5	16.1	7.5	20.8	36.8
<b>1985</b>	5.9	6.8	12.6	3.9	7.8	30
<b>1993</b>	5.3	5.6	10.7	5.2	12.5	21.61

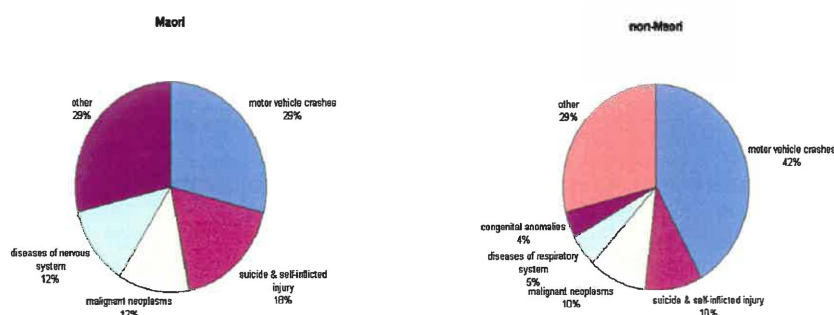
rates per 10,000 population

Source: Department of Health 1985c & 1993

Table 5.9 presents maternal mortality rates by age-group and ethnicity during 1975, 1985 and 1993. For both groups, mortality rates clearly increased with maternal age and the vast majority of deaths occurred at middle or older ages. The apparent similarity of mortality rates for women aged 15-24 years contrasts sharply with differences at older age-groups. Among women 25 years of older, Māori mortality rates doubled those of non-Māori in 1993 and the mortality rate for Māori women aged 25-34 years had increased by sixty percent since 1985. In the nineties, maternal mortality rates among Māori aged 25-44 years were considerably worse than those for comparable non-Māori in the seventies (Department of Health 1985c, 1991a & 1993).

Figure 5.6 presents the main causes of death for women aged 15-24 years by ethnicity in 1993. A greater proportion of Māori deaths were due to suicide, self-inflicted injury and malignant neoplasms. Māori rates of death from cerebrovascular disease and diseases of the nervous system were six times those of non-Māori.

**Figure 5.6: Major causes of death in females aged 15-24 years, 1993**



Source: Department of Health, 1993b

In comparison with the younger group, women aged 25-44 years had higher mortality rates and more causes of death. During 1980-1993, malignant neoplasms, motor vehicle accidents and ischaemic heart disease were the leading



causes of death. Māori mortality from malignant neoplasms and ischaemic heart disease had declined slightly since the eighties but Māori rates still exceeded those of non-Māori and the gap between these groups had widened (Department of Health, 1993b; Pomare & de Boer, 1988; Pomare et al, 1995).

Table 5.10 presents the main causes of death for women aged 25-44 years by ethnicity and rate in 1993. Disparity is evident for rheumatic heart disease, diseases of the genito-urinary system, homicide and endocrine disorders. Māori mortality from these causes was up to sixteen times higher than non-Māori. In contrast, however, non-Māori experienced higher mortality from diseases in the digestive system, congenital anomalies and complications of pregnancy, childbirth and the puerperium<sup>53</sup>. Despite little difference in the mortality rates for suicide and self-inflicted injury, the number of Māori deaths from these causes had increased by sixty percent since the eighties (Department of Health, 1993b; Pomare & de Boer, 1988).

**Table 5.10: Causes of death among women aged 25-44 years by ethnicity & rate, 1993**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
all causes	85	16.26	386	8.06
malignant neoplasms	30	5.73	159	3.32
diseases of the circulatory system	19	3.63	40	0.83
<i>rheumatic heart disease</i>	5	0.96	3	0.06
<i>ischaemic heart disease</i>	6	1.15	9	0.19
<i>cerebrovascular heart disease</i>	3	0.57	16	0.33
unintentional injuries	16	3.06	60	1.25
<i>motor vehicle crashes</i>	13	2.49	40	0.83
suicide & self-inflicted injury	4	0.76	37	0.77
endocrine, nutritional, metabolic & immunity disorders	4	0.76	7	0.15
diseases of the respiratory system	3	0.57	7	0.15
diseases of the genitourinary system	3	0.57	3	0.06
homicide	3	0.57	5	0.1
diseases of the digestive system	1	0.19	11	0.22
congenital anomalies	0	0	11	0.23
complications of pregnancy, childbirth & puerperium	0	0	10	0.2

rate per 10,000 population

Source: Department of Health, 1993b

In contrast to the general decrease in mortality rates from ischaemic heart disease, there was no change in the rate of death from cancer. Among women aged 25-44 years, Māori experienced higher mortality from all cancers. In particular,

Māori mortality rates from malignant neoplasms of the lung, stomach, liver and thyroid at least doubled those of non-Māori. Of female specific cancers, Māori also had higher rates of death from malignant neoplasms of the uterus, ovary, and fallopian tube. The vast majority of deaths from cancers in the breast or cervix occur when women are 45 years or older. Among women aged 25-44 years, non-Māori had a slightly higher rate of death from breast cancer but malignant neoplasms accounted for thirty-five percent of all Māori deaths and most were caused by breast cancer. An excessive rate of lung cancer among Māori females has been evident for many years, but in 1993, Māori women aged 25-44 years were equally likely to die from cancer of the genito-urinary system (Department of Health, 1993b).

At this maternal age-group, the vast majority of genito-urinary cancers were in the genital rather than urinary system and cervical cancer was a leading cause of death. Between 1985-1993, Māori mortality rates from cervical cancer doubled those of non-Māori. In general, however, fifty percent of non-Māori and forty percent of all Māori deaths were due to malignant neoplasms of the breast and genito-urinary system in 1993.

In addition to the higher rate of death from genito-urinary cancer, Māori mortality from diseases of the genito-urinary system at least trebled those of non-Māori. Three percent of Māori deaths, at this maternal age-group, were due to genito-urinary disease in 1993. Furthermore, Māori mortality rates from diseases of the genito-urinary system were on the rise which was not the case for non-Māori (Department of Health, 1985c, 1991b, 1992c, 1993b). The majority of diseases in the genito-urinary system involved disorders of the kidney, urinary system, female genital tract and/or pelvic organs. Within these categories, Māori experienced higher rates of death from diseases in the kidney, urinary system and non-inflammatory disorders of the ovary, fallopian tube and broad ligament (Department of Health, 1985c, 1991b, 1992c, 1993b).

Maternal endocrine, metabolic and/or blood diseases along with diabetes mellitus, nutritional deficiencies, obesity and anaemia can clearly impair infant health status and lead to other disorders (Cundy et al, 1993). In 1993, five percent of Māori and two percent of non-Māori deaths, among women aged 25-44 years, were due to endocrine, metabolic and blood diseases. During 1985-1993, Māori

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<sup>53</sup> A discussion of complications of pregnancy, childbirth and puerperium follows.

mortality rates from endocrine, metabolic, nutritional and immunity diseases including diabetes and obesity were up to five times higher those for non-Māori. Between 1985-1991, Māori mortality rates from diabetes mellitus among women aged 25-44 years increased by forty-six percent (Department of Health, 1985c, 1991b, 1992c, 1993b).

In 1993, all deaths from complications of pregnancy, childbirth and the puerperium were non-Māori (refer Table 5.11). This finding is surprising and may be an artefact of ethnicity classification procedures. However, three percent of these deaths were attributed to complications of pregnancy, childbirth and the puerperium and the rate of death from this cause had increased from 0.09 to 0.2 deaths per 10,000 population since 1984. The majority of deaths were due to obstetrical pulmonary embolism and other complications of the puerperium. However, the rate of death from complications of pregnancy increased fivefold, from 0.02 to 0.1 deaths per 10,000 population, during 1984-1993 (Department of Health 1985, 1991a & 1993).

Given the increasing significance of this cause, the New Zealand Health Information Service selected maternal deaths as a special topic for discussion in 1993 (Department of Health, 1993). Maternal deaths refer to a death during pregnancy or within three months postpartum. Although ethnicity was not classified, maternal deaths were grouped in terms of direct and indirect causes.. Direct causes of maternal death are attributed to complications during pregnancy, childbirth or puerperium whereas indirect causes result from, for example, a motor vehicle accident or suicide. Between 1984-1993, the maternal death rate increased from 11.6 to 34 deaths per 100,000 livebirths. In 1993, sixty-five percent of the maternal deaths were attributed to indirect causes but the rate for direct causes had increased from 5.8 to 11.9 deaths per 100,000 livebirths since 1984. In 1993, twelve maternal deaths were due to direct causes. Ten of these women were aged 25-44 years and the majority resulted from complications during the puerperium (Department of Health, 1993b). Reasons for the increasing rate of maternal deaths from direct causes are not clear but there is evidence to suggest the quality of care may have been a factor.

**Table 5.11: Mortality rates of women aged 15-44 years by Regional Health Authority & ethnicity, 1993**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
North Health	44	11.65	184	8.03
Midland	40	10.89	87	7.33
Central	14	4.93	131	7.52
Southern	1	1.08	99	6.1
Total NZ	99	8.83	501	7.32

rate per 10,000 population  
Source: Statistics New Zealand, 1993

Table 5.11 displays mortality rates for women at the main ages of reproduction by Regional Health Authority in 1993. Māori had an excessive rate of total mortality but this was not necessarily the case in each region. In the Northern and Midland regions, Māori mortality rates were doubled those of non-Māori rates but non-Māori rates were higher in the Central and Southern regions. In the Southern region, non-Māori rates were six times those of Māori in 1993. Ethnicity collection procedures in the Southern RHA are more likely to under-report Māori ethnicity (Department of Health, 1991a; Kilgour & Keefe, 1992; Wauchop & Dyll, 1993). However, an alarming increase in Northern RHA mortality rates for Māori women were evident wherein Auckland rates doubled between 1991-1993. Increased Māori maternal mortality rates were also evident in Tairāwhiti, Taranaki and Manawatu/Wanganui. Such trends contrasted with decreasing rates in all other regions and the general decline of non-Māori maternal mortality rates throughout New Zealand (Department of Health, 1991a & 1993b).

### ***Maternal morbidity***

Further insight on factors which influence Māori maternal health status can be gained from hospital admission and discharge data. In 1992, roughly seventy percent of Māori, hospital admissions for women aged 15-24 years, and sixty percent of admissions for those aged 25-44 years, were for medical care during pregnancy, childbirth and the puerperium in 1992.

Among women aged 15-24 years, the remaining causes of admission were for unintentional injuries, respiratory disease, signs or symptoms, mental disorders and intentional injuries. In comparison with non-Māori, Māori had higher rates of admission for unintentional injuries, asthma, mental disorders, intentional injuries and diseases of the genito-urinary, digestive and musculo-skeletal system (Pomare

et al, 1995; Public Health Commission, 1994a). Furthermore, the gap between these groups had widened for unintentional injuries (Pomare et al, 1995; Public Health Commission, 1994a).

Various indicators suggest Māori women aged 15-24 years may be particularly disadvantaged by mental disorders and violence. In 1992, three percent of Māori admissions, for women in this age-group, were due to mental disorders and intentional injuries (Pomare et al, 1995). Furthermore, Māori rates of first admission to psychiatric institutions at least trebled those of non-Māori for schizophrenic disorders, affective psychosis, paranoid states, other psychoses and drug or alcohol dependence or abuse (Department of Health, 1992a; Public Health Commission, 1994). Between 1970-1992 Māori first admissions to psychiatric hospitals, at this maternal age-group, reduced by twenty-three percent but non-Māori rates were cut in half (Pomare et al, 1995).

Although mental disorders became a leading cause of hospitalisation for females aged 15-24 years in 1992, a greater number of admissions were due to intentional injuries. The rate of Māori admissions due to intentional injuries at least than doubled the rate for non-Māori. Within this cause, Māori had higher admissions for suicide, self-inflicted injury, homicide and/or damage purposely inflicted by other persons. In 1992, Māori admissions for homicide and/or damage purposely inflicted by other persons were seven times higher than those for non-Māori (Public Health Commission, 1994).

In comparison with their younger counterparts, women aged 25-44 years had higher rates of admission for diseases of the genito-urinary and digestive system but lower rates of admission for unintentional injuries and symptoms in 1992 (Department of Health, 1992b). Among women of this older age-group, genital tract disease emerged as a leading cause of admission. In 1992, the rate of Māori admissions for this cause was 1,656 per 10,000 females aged 25-44 years. Within this category, common problems included inflammatory diseases of the uterus, cervix or vagina; genital prolapse or endometriosis; non-inflammatory disorders of the ovary, fallopian tube, broad ligament, cervix or vagina, ovarian cysts or polyps and disorders of menstruation and infertility. In addition, 2939 per 10,000 Māori women at this age-group were admitted for diseases of the genito-urinary system in 1992. Disorders of the female reproductive system are clearly a

priority for Māori reproductive health (Pomare et al 1995; Public Health Commission, 1994b).

During 1984-1992, Māori admissions for unintentional injuries among women aged 25-44 years increased by four percent whereas non-Māori rates increased by nineteen percent. For this cause, therefore, the gap between these groups has narrowed. Nevertheless, Māori rates of admission at least doubled those of non-Māori for most unintentional injuries in 1992. Within this category, the majority of admissions were due to iatrogenic complications of medical or surgical care. Indeed, the rate of Māori admission for iatrogenic complications increased by 281 percent between 1984-1992 (Public Health Commission, 1994b). Māori women at this maternal age-group experience fewer admissions for intentional injuries than their younger counterparts but a greater proportion of admissions are due to homicide or injury inflicted by other persons. In 1992, the Māori admissions were at least eight times higher than those for non-Māori (Public Health Commission, 1994b).

Although mental disorders were not a leading cause of hospitalisation for females aged 25-44 years in 1992, the rate of Māori first admissions to psychiatric hospitals had increased by fourteen percent since 1970. This trend contrasted sharply with declining rates among comparable non-Māori and women aged 15-24 years. In 1992 Māori admissions for mental disorders doubled those of non-Māori (Public Health Commission, 1994b).

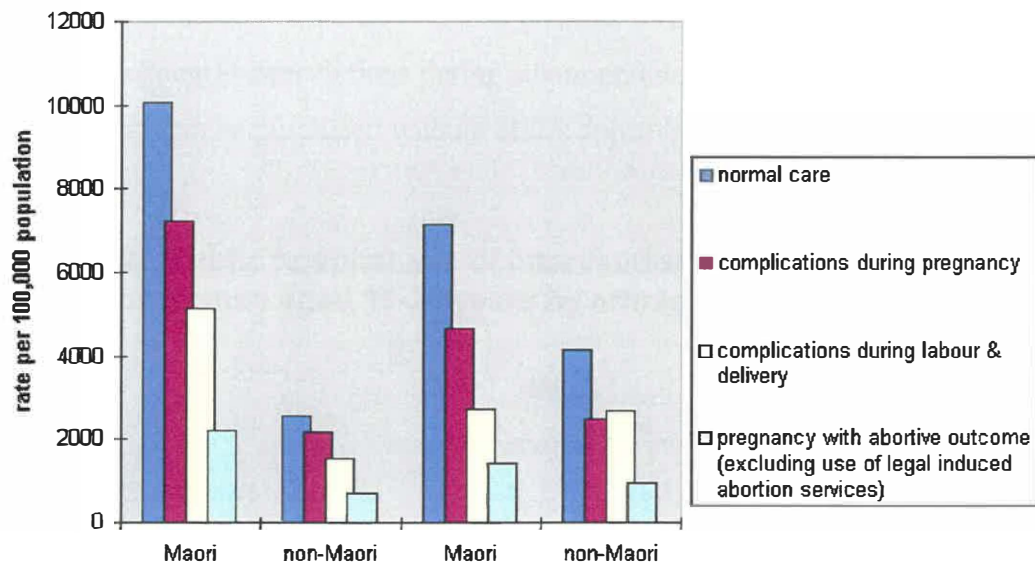
### **Complications during pregnancy & childbirth**

A small, but, interesting body of research has examined the manner in which physiological indicators of normal Māori pregnancy may differ from non-Māori (Bailey, 1970,1982; Barry et al, 1992; Reddy & Campbell, 1985). For example, Māori appear to have higher levels of serum uric acid concentration and bacteriuria and such findings have implications for the definition of baseline measures. In general, however, the weight of literature on complications during pregnancy and childbirth is gained from NZHIS-derived publications.

Figure 5.7 displays public hospital discharges for pregnancy, labour and delivery by rate, maternal age-group and ethnicity during 1992. The higher fertility patterns of Māori are reflected in the higher rates of discharge for normal care at both maternal age-groups. However, Māori women aged 15-24 years experienced

the highest rates of admission for complications during pregnancy, labour and delivery. This finding contrasts with the experience of non-Māori, at this age-group, who had the lowest rates of discharge for all factors. Māori women, in the 25-44 age-group, had the second highest rate of discharge for complications during pregnancy.

**Figure 5.7: Public hospital discharges for pregnancy, labour & delivery by rates per 100,000 population and ethnicity, 1992**



Source: Public Health Commission 1994 & Pomare et al 1995

A number of authors have examined admissions for pregnancy with abortive outcome (Pomare et al, 1995; Public Health Commission, 1994). This category refers to admissions for terminations and other services which deal with the loss of a baby, such as, ectopic pregnancy and miscarriage or spontaneous abortion. The Abortion Supervisory Committee (1995) provides information on hospital admissions for elective abortion. When this data is subtracted from the admissions for pregnancy with abortive outcome, a rough estimate of the admissions for miscarriage and/or ectopic pregnancy is gained. Māori clearly experienced higher rates of admissions for such services the rates for Māori women, aged 15-24 years were highest.

Among women aged 15-24 years, special admissions were the second leading cause of hospitalisation in 1992 and Māori rates were three times those of non-Māori (Pomare et al, 1995). Forty-three percent of the special admissions, at

this maternal age-group, were for postpartum care and forty-two percent were for mothers who boarded at the hospital to assist the care of their newborns. Among women aged 25-44 years, Māori special admissions were twice the rate of non-Māori in 1992. At this maternal age-group, a third of the special admissions were for boarders, a third were for contraceptive management and twenty-six percent were for postpartum care or examination (Pomare et al, 1995).

Any further use of NZHIS-derived statistics to clarify experience of complications among Māori during pregnancy and childbirth is hindered by the lack of published information. Until 1994 it was possible to purchase unpublished data on the use of obstetric interventions during labour and delivery. The latest year for which such data can be purchased without ethics approval from the RHA of origin is 1992.

**Table 5.12: Public hospital use of intervention during labour and delivery for women aged 15-24 years by ethnic group & rate, 1992**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
manually assisted deliveries	4728	10120.1	8828	3891.1
total episiotomy	460	984.6	1664	733.4
- <i>episiotomy without forceps</i>	300	642.1	1049	462.4
total inductions	1185	2536.4	2329	1026.6
- <i>artificial rupture of membranes</i>	1100	2354.5	2018	899.5
- <i>medical induction</i>	77	164.8	301	132.7
total instrumental deliveries	466	997.5	1536	677
- <i>low forceps with episiotomy</i>	160	342.5	615	271.1
- <i>mid forceps</i>	50	107	170	74.9
- <i>high forceps</i>	15	32.1	34	14.9
- <i>forceps rotation of fetal head</i>	51	109.1	201	88.6
- <i>vacuum extraction</i>	76	162.7	223	98.3
total caesarean deliveries	462	988.9	1288	567.7
- <i>cervical caesarean section</i>	439	939.7	1226	540.4
repair of obstetric lacerations	1204	2577.1	2755	1214.3
manual removal of retained placenta	76	162.7	174	76.7
<b>total interventions</b>	<b>8429</b>	<b>18041.9</b>	<b>17996</b>	<b>7932.1</b>

Source: Purchased data from the New Zealand Health Information Service  
Rates calculated per 100,000 population based on 1991 Census

Table 5.12 presents public hospital obstetric interventions during labour and delivery for women aged 15-24 years by ethnic group and rate per 100,000 population in 1992. At this maternal age-group, the rate for Māori total interventions was twice the rate for non-Māori. In particular, Māori had higher rates of caesarean section, induction, repair of obstetric lacerations (excluding



episiotomy), manual removal of retained placenta and manually assisted delivery techniques. In 1992, twelve percent of Māori births were by caesarean section, one third were induced and ninety-two percent involved artificial rupture of membranes. Although Māori experienced a lower proportion of instrumental deliveries, the rate of instrumental deliveries was higher than non-Māori particularly when delivery involved high forceps and/or vacuum extraction.

**Table 5.13: Public hospital use of intervention during labour and delivery for women aged 25-44 years by ethnic group & rate, 1992**

	Māori		non-Māori	
	<i>n</i>	rate	<i>n</i>	rate
manually assisted deliveries	3916	6250.7	19429	4245.1
total episiotomy	221	352.8	3323	726.1
- episiotomy without forceps	136	217.1	1770	386.7
total inductions	926	1478.1	4917	1074.3
- artificial rupture of membranes	846	1350.4	4470	976.7
- medical induction	78	124.5	422	92.2
total instrumental deliveries	312	498.0	3392	741.1
- low forceps with episiotomy	85	135.7	1553	339.3
- mid forceps	18	28.7	217	47.4
- high forceps	15	23.9	77	16.8
- forceps rotation of fetal head	44	70.2	463	101.2
- vacuum extraction	39	62.3	343	74.9
total caesarean deliveries	611	919.4	4070	889.3
- cervical caesarean section	547	873.1	3916	855.6
repair of obstetric lacerations	700	1117.3	7016	1532.9
manual removal of retained placenta	91	145.3	500	109.2
total interventions	6664	10637	41166	8994.5

Source: Purchased from New Zealand Health Information Service  
Rates calculated per 100,000 population based on 1991 Census

Table 5.13 displays the main categories of public hospital interventions during labour and delivery by ethnicity and rate for women aged 25-44 years in 1992. Little difference between the intervention rates for Māori and non-Māori women at this maternal age-group was evident. Although Māori experienced higher rates of manually assisted delivery, artificial rupture of membranes, high forceps and manual removal of retained placenta, non-Māori excess was evident in all other categories. A higher proportion of Māori births involved induction and caesarean section. Of Māori deliveries, seventeen percent were by caesarean section, twenty-seven percent were induced and nine percent were instrumental. Among non-Māori women, in comparison, fourteen percent delivered by caesarean section, fifteen percent were induced and eleven percent had

instrumental deliveries. In 1992, Māori women at both maternal age-groups were more likely to experience deliveries which involved caesarean section and induction procedures whereas non-Māori were more likely to experience instrumental deliveries.

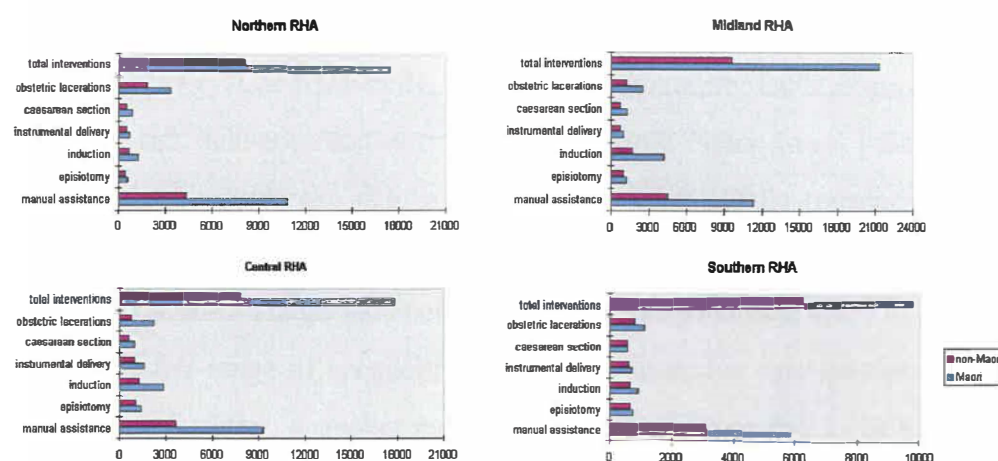
Within Māori, the total rate of intervention for women aged 15-24 years doubled that for those aged 25-44 years in 1992. This finding contrasts with non-Māori data where younger women experienced fewer intervention. Within Māori women, those aged 15-24 years were two to three times more likely to experience episiotomy, mid forceps, vacuum extraction, manually assisted delivery, induction procedures and repair of obstetric lacerations (excluding episiotomy). At both maternal age-groups, the rates for caesarean section delivery and manual removal of retained placenta were similar. However, women aged 25-44 years were more likely to have caesarean section and/or instrumental deliveries and their younger counterparts were more likely to be induced.

There is evidence to suggest the use of obstetric technology during labour and delivery may have been influenced by the Regional Health Authority (RHA) in which women gave birth. Total intervention rates were highest in the Midland region. In comparison with other RHAs, Māori women of both maternal age-groups and non-Māori aged 15-24 years, who gave birth in this region, had the highest rates of total intervention, manually assisted delivery, induction, artificial rupture of membranes and caesarean section. Māori women giving birth in the Midland RHA also had the highest rates of vacuum extraction. In the Northern region, women had the highest rates for repair of obstetric lacerations and non-Māori, aged 25-44 years, had the highest rate for manual removal of retained placenta. In the Central region, women had the highest rates of instrumental delivery, especially when delivery involved low forceps with episiotomy, high forceps and forceps rotation of the fetal head. The Central RHA also had the highest total intervention rate for non-Māori women aged 25-44 years and the highest episiotomy rate for all women except Māori aged 15-24 years. In general, the Southern RHA had the lowest interventions rates.

Figure 5.8 presents obstetric interventions during labour and delivery for women aged 15-24 years by Regional Health Authority, ethnicity and rate in 1992. In the Northern, Midland and Central regions, Māori rates of total intervention doubled those of non-Māori. Within the Northern region, Māori rates of manually

assisted delivery, induction, caesarean section, repair of obstetric lacerations and manual removal of retained placenta also doubled those of non-Māori. Furthermore, rates of medical induction and high forceps delivery among Māori in the Northern RHA quadrupled the rates non-Māori.

**Figure 5.8: Public hospital interventions during labour and delivery for women aged 15-24 years by Regional Health Authority, ethnicity & rate, 1992**



Source: Department of Statistics, 1995 and Ministry of Health, 1995  
Rates calculated per 100,000 population by 1991 Census

In the Midland region, Māori had higher rates of manually assisted delivery, induction, caesarean section, repair of obstetric lacerations, manual removal of retained placenta, artificial rupture of membranes, high forceps and vacuum extraction. Within the Central region, Māori rates of manually assisted delivery, induction, caesarean section and repair of obstetric lacerations were higher than non-Māori. In the Southern region, experience of obstetric intervention was similar but Māori rates of manually assisted delivery, manual removal of retained placenta and post-partum exploration of the uterine cavity at least doubled those of non-Māori.

In some facilities, a third to half all Māori births, for women aged 15-24 years, were delivered by caesarean section or required medical induction and/or repair of obstetric lacerations. Similarly, in some facilities up to two-thirds of the Māori women aged 25-44 years were either medically induced, delivered by caesarean section or third required repair of obstetric lacerations. Manually assisted delivery was almost universal but the Ministry of Health is not sure what the procedure involves (personal communication with Tracey Stewart of the NZ Health Information Service, November 1996). It has been suggested this technique

may involve a range of routine procedures, namely, use of partograms, electronic fetal monitors, “catching” the baby, clamping the cord, administration of an ecbolic and vitamin K injections.

In 1992, however, such findings suggest maternal childbirth experience of childbirth may have been influenced by the quality of care received at each maternity facility. This is also demonstrated when intervention rates are analysed by hospital level. Using Ministry of Health guidelines, published in 1986, each of the eighty-nine maternity facilities operating in this country during 1992 could be classified as Level O-I, II or III. Briefly, the Level O-I maternity facilities provided services for low risk deliveries and normal baby care only. Some Level I facilities performed emergency caesarean deliveries but these were usually transferred to Level II or III hospitals. A Level II maternity hospital provided specialist obstetric and paediatric care with limited facilities for neonatal intensive care and Level III hospitals had the full range of specialist and neonatal intensive care services. All RHA had low-risk facilities, a smaller number of medium to high-risk facilities and at least one tertiary facility. To some extent women can choose which type of facility they wish to give birth in but others are transferred to specialist facilities during labour. Roughly ten percent of maternity patients are transferred to tertiary units during labour (National Women’s Hospital, 1994)<sup>54</sup>.

In 1992, sixteen percent of Māori births took place in Level O-I maternity hospitals, forty-six percent were delivered in Level II facilities and thirty-eight percent delivered in Level III facilities. In contrast, fifteen percent of non-Māori births were Level O-I, thirty-five percent were Level II and fifty percent were Level III. Māori women, therefore, were more likely to give birth in Level II units whereas non-Māori mostly gave birth in Level III facilities. Intervention rates for each of these facilities showed an expected increase in the proportion of women who received complex procedures at Level III units and such increases were consistent for both ethnic groups. For example, ninety-eight percent of the Māori women who delivered in Level O-I hospitals had manually assisted deliveries, thirteen percent were induced, two percent had instrumental deliveries, three percent had episiotomy, nineteen percent required repair of obstetric lacerations (excluding episiotomy) and less than one percent required manual removal of retained placenta. In Level II hospitals, the percentage of Māori women requiring

episiotomy, induction, instrumental deliveries and removal of retained placenta increased while the number who experienced repair of obstetric lacerations reduced. In comparison with Level II, Māori women who delivered in Level III facilities were less likely to have an episiotomy, induction, instrumental deliveries and/or manually assisted delivery but the likelihood of caesarean section increased. In Level II facilities, twelve percent of all Māori births were by caesarean section, twenty-two percent required repair of obstetric lacerations and two percent involved manual removal of retained placenta.

**Table 5.14: Interventions as a proportion of the total for each ethnic group by level of hospital, 1992**

	Māori			non-Māori		
	Level O-I	Level II	Level III	Level O-I	Level II	Level III
manually assisted delivery	19	44	37	19	35	47
instrumental deliveries	4	55	41	3	42	54
mid forceps	0	85	15	4	51	45
breech extraction	5	40	55	2	26	72
vacuum extraction	5	58	37	5	25	70
failed forceps	0	75	25	0	50	50
episiotomy	8	58	34	3	38	59
inductions	10	55	35	8	50	42
artificial rupture of membranes	11	54	34	8	49	43
other surgical induction	0	70	30	0	66	34
medical induction	0	60	40	8	54	38
caesarean section	0	51	49	0	38	62
not cervical	0	23	77	0	16	84
repair of obstetric laceration	16	34	44	17	26	57
removal of retained placenta	2	47	52	2	37	61
exploration of uterine cavity, pp	0	0	100	0	46	54
births	16	46	38	15	35	50

Source: Department of Statistics, 1995 and Ministry of Health, 1995

Considerable difference between Māori and non-Māori childbirth experience was evident when intervention, by each hospital level, are a proportion of the total for each ethnic group, Table 5.14 displays the proportion of interventions administered at each hospital level by ethnic group in 1992. Level II facilities performed the majority of Māori interventions. In particular, eighty-five percent of all Māori mid forceps deliveries, fifty percent of vacuum extractions, fifty-eight percent of episiotomies and fifty-one percent of all Māori caesarean sections took place in Level II facilities. In sharp contrast, the majority of non-Māori interventions took place at Level III facilities. At least seventy percent of non-Māori breech and vacuum extractions, fifty-nine percent of episiotomies and sixty-two percent of non-Māori caesarean sections took place in Level III

<sup>54</sup> This figure excludes homebirth transfers.

hospitals. Māori women delivering at Level O-I hospitals were more likely, than their non-Māori counterparts, to experience breech extraction, episiotomy and artificial rupture of membranes.

Such findings may be attributed to maternal choice of maternity facility but ethnicity may also have an influence the quality of maternity care. For example, non-Māori women may require more specialist care or may be more likely to have high-risk deliveries or may more frequently be transferred to tertiary units for specialist care.

### **Research on Māori maternity issues**

Over the last few decades, a sporadic and somewhat inconsistent body of research has examined aspects associated with Māori experience of maternity services (Bryant 1994; Clark et al, 1986; Essex et al, 1992; Gunn et al, 1983; Harris, 1994; Hutton et al 1982; Ropiha & Middleton 1993; Ora Toa Health Unit 1992; Salmond 1976; Whakatupu 1991). The early studies simply described the sociological characteristics of maternity service users but by mid-1980 attention had focused on identifying inequities in antenatal class attendance. More recent studies have examined Māori satisfaction with the structure of maternity services and proposed a variety of strategies for change.

In 1976 Salmond showed that mothers living in low status areas in Wellington tended to be of Māori or Pacific Island ethnicity, unmarried and low educational achievement. Mothers from these areas were more likely to delay presentation for obstetric care and the vast majority did not attend antenatal classes, even when such services were free. In addition, they tended to have shorter postpartum stays and did not make use of postnatal services. Similar studies in the Auckland region found that young, unmarried, Māori or Pacific Island primiparae of low socio-economic status were not only less likely to participate in this system but also more likely to smoke cigarettes (Gunn et al, 1983; Hutton et al, 1982). Such findings led to concern that maternity services and antenatal classes were not being utilised by those who would probably benefit most (Pomare & de Boer, 1988).

Attempts to clarify the reasons for this position were not straightforward but the idea that utilization of maternity services may be influenced by socio-economic factors was accepted. Salmond (1976), for example, had shown that

mothers from low income areas were less likely to be involved in any form of social activity and others suggested antenatal class attendance may be hindered by a lack of transport (Gunn et al, 1983; Hutton et al, 1982; Salmond, 1976;). However, Gunn et al (1983) found that many non-attenders did not 'like' antenatal classes and could not see the benefit of attendance. Both Hutton et al (1982) and Gunn et al (1983) reported many non-attenders did not know about the existence or purpose of antenatal classes. Such findings suggested the use of maternity services may be influenced by socio-economic factors as well as perceptions on the value of participation and the effectiveness of processes for dissemination of health information. Furthermore, Salmond (1976) felt that the under-utilisation of services could be attributed to a so-called *cultural incongruity* between care providers and their working-class clients. He suggested such cultural incongruity may cause women from low attendance areas to receive a lower quality of medical care.

To improve the accessibility of services, Salmond recommended the establishment of community based maternity services and highlighted the need for medical professionals to develop a more tolerant attitude (1976). However, Hutton et al (1982) claimed neither improvements in bus transport, the provision of childcare facilities nor the establishment of community-based antenatal classes would improve attendance rates. In their view, the development of community facilities would jeopardise procedures for maternal familiarisation with the hospital environment. While acknowledging a possible need to improve aspects of antenatal class presentation, these authors suggested the key to increased participation lay in a high-school health promotion programme. Such controversy highlights the nature of Māori maternity service debate during the nineteen eighties.

In 1988, an informal survey of antenatal classes throughout New Zealand showed little improvement in Māori attendance rates (Palmer, 1988). Indeed, the majority of Area Health Boards were neither cognizant of low participation rates by Māori nor interested in the ethnicity of attenders (Tauranga, Hawkes Bay, Nelson, Canterbury, Southland, Auckland and Otago). AHBs in Taranaki, Rotorua and Wairarapa were aware that Māori attendance rates were low and were receptive to the establishment of community-based systems and programmes to address cultural incongruity.

More recent studies have continued to demonstrate a Māori reluctance to participate in systems for antenatal education (Bryant, 1994; Harris, 1994; Midland Health 1994b; Ora Toa Health Unit, 1992; Ratima et al, 1994; Whakatupu 1991). In Palmerston North and Christchurch during 1993-1994, for example, just one fifth of all Māori mothers-to-be attended antenatal classes (Ratima et al, 1994; Bryant, 1994)

The 1990s brought a new era in Māori maternity research which focused on the need to not only examine the utilisation of prenatal obstetric care services but also assess Māori satisfaction with maternity services and identify strategies for improvement. Various studies showed that Māori were not utilizing opportunities for obstetric prenatal care (Essex et al, 1992; Harris, 1994; Ratima et al, 1994). Of Māori women giving birth in Palmerston North during 1993-1994, for example, little more than half received prenatal obstetric care from a doctor, midwife, hospital or specialist (Ratima et al, 1994). Others have shown that Māori delay the onset of obstetric care and the process of booking-in for delivery (Harris, 1994). In this study, Māori mothers tended to book-in either beyond 5 months gestation, just prior to delivery or when they were actually in labour.

In an extensive cohort study during 1990-1991, fourteen percent of the four thousand women interviewed did not initiate any form of antenatal care until the second trimester (Essex et al, 1992). Late attendance for antenatal care was associated with young, unmarried women of Māori or Pacific Island ethnicity, lower socio-economic status, low educational attainment and high parity. These authors discussed the need for further research to clarify the reasons for delayed care in New Zealand. However, they also suggested such behaviour was more likely to be associated with maternal indecision about keeping the baby, than dissatisfaction with the maternity system or fear of hospitals and doctors. This suggestion was not in tune well established views among others.

A sizeable body of literature has helped to demonstrate the manner in which Māori experience of maternity services may be influenced by feelings of fear and dissatisfaction (Bryant, 1994; Harris, 1994; Manihera & Turnbull, 1990; National Advisory Commission on Core Health and Disability Services, 1993; Ora Toa Health Unit, 1992; Ratima et al, 1994; Rolleston, 1989). In 1990, for example, Manihera & Turnbull suggested Māori attitudes to hospitalisation for gynaecological matters may be associated with a “morbid fear of death” (pg 459).



Māori reluctance to attend for medical and maternity care has been linked to the likelihood of tapu violation and the inappropriateness of cleansing rituals (Bryant, 1994; Dansey, 1978; Durie, 1977, 1985; Harris, 1994; Manihera & Turnbull, 1990; Ora Toa Health Unit, 1992; Tipene-Leach, 1978).

Using a trail-blazing methodology of Māori interviewing Māori during the 1980s, more than one thousand women said they felt “whakama” in medical environments (Murchie, 1984). Loosely translated, this term refers to feelings of shyness or self-consciousness. Harris (1994) and Bryant (1994), for example, have shown that Māori experience of whakama can be exasperated by a variety of maternity care events. Feelings of whakama may be associated with the more common presence of male, rather than female, doctors; the intimate nature of internal examinations and the documentation of intimate information may be seen as an intrusion. Administrative staff and doctors have been criticized for assuming the right to ask personal questions, taking women for granted, make assumptions about availability to attend for obstetric care and being less attentive to women of high parity. Within the context of antenatal classes, Harris (1994) suggested experience of whakama may be associated with the stigma that Māori are in some way inferior to non-Māori participants.

Ratima et al (1994) found that forty percent of the Māori women in their study had an unacceptable experience in maternity hospitals. The majority related to staff attitudes or behaviours and a “lack of courtesy” to Māori ways of doing things (Ratima et al, 1994; pg 16). Support for the establishment of Māori maternity services which combine traditional and scientific methods has also been evident (Bryant, 1994; Harris, 1994; Ora Toa Health Unit, 1992; Ratima et al, 1994; Rolleston, 1989).

Several authors have suggested Māori may be reluctant to express feelings of dissatisfaction with medical services, especially when the recipients of such communication are non-Māori (Beagley, 1984; Harris, 1994; Mackay, 1985; Roestenburg, 1981; Tipene-Leach, 1978). Both Mackay (1985) and Roestenburg (1981) have noted that Māori patients showed reverence towards doctors and health professionals and such perceptions may inhibit Māori willingness to challenge, criticize or complain about medical services. In the words of a Ngati Toa woman “we as people [Māori] tend to be compliant, so when we go into

hospitals or places like that, then we just comply with what people want us to do” (Ora Toa Health Unit, 1992; pg 27).

Nevertheless, several small but influential surveys have provided clear evidence of Māori dissatisfaction with maternity services in the 1990s (Bryant, 1994; Harris, 1994; Midland Health, 1994; Ora Toa Health Unit, 1992; Ratima et al, 1994; Whakatupu, 1991). Less than a third of the three hundred and seventy-six Māori women surveyed after delivery in maternity facilities within the Auckland Area Health Board liked the maternity staff and did not have dislikes to report (Whakatupu, 1991). In addition, sixty percent of the respondents in this study did not attend antenatal classes, fourteen percent liked nothing about their experience of giving birth, twenty percent disliked the food and the majority discharged themselves earlier than necessary because they disliked the environment.

If attendance is an indicator of satisfaction with services, then a study of thirty Palmerston North Māori suggested low satisfaction with antenatal classes but higher levels of satisfaction with obstetric and postnatal services (Ratima et al, 1994). Roughly a third of participants in this study attended antenatal classes whereas seventy-six percent received prenatal obstetric care and ninety-three percent had some form of postnatal care. Length of maternity hospital stay varied from a few hours to fourteen days and shorter stays were generally due to women being eager to return home. However, one woman discharged herself because she felt uncomfortable, forty percent rated hospital staff as less than good; few considered their childbirth experience good or very good and most would rather have given birth at home.

Bryant (1994) has provided an unusual attempt to directly measure Māori satisfaction with Christchurch maternity service providers. Although the twenty-seven participants rarely regarded service providers as unsatisfactory, this study produced evidence of dissatisfaction. Respondents felt midwives provided the most satisfactory service while the services provided by general practitioners, specialists and Plunket were considered average. Of maternity providers, hospital staff and antenatal classes were rated least satisfactory. Indeed, twenty-six percent of participants in this study discharged themselves because they “wanted out ... could not stand the hospital ... had enough ... and ... felt they would get better rest at home” (Bryant, 1994, pg 42).

To explain such findings, it has been suggested Māori reluctance to make use of maternity services may be influenced by poor understanding on the purpose of this system (Ratima, et al 1994). Others have referred to Salmond's (1976) view that experience of cultural incongruity may impact on the quality of maternity services for Māori (Ora Toa Health Unit, 1992; Ratima et al, 1994; Bryant, 1994; Harris, 1994). Towards this end, Māori have described the antenatal class as "... inappropriate, intimidating, formal, uncomfortable, devoid of spirituality, based on a European view, lacking whanaungatanga, condescending, boring and a waste of time ..." (Ora Toa Health Unit, 1994, pg 24; Harris, 1994 pg 20; Bryant, 1994, pg 67; Midland Health, 1994b). Christchurch maternity services have been similarly described " ... staff didn't have much time ... made you feel like you were a hassle ... didn't seem very caring ... they were really snobby ... never offered advice ... didn't listen to me ... it was like talking to a brick wall ... one of the nurses was telling me 'don't worry, Māoris don't feel any pain' ... no one talked to me or offered support ... all the nurses were Pakeha ... tried to push their views on me ... they made me feel like a slab of meat ... talked down to me ... insensitive to how I felt about my body ... I wasn't happy there ... " (Bryant, 1994, pgs 58-65).

Various authors have linked Māori feelings of dissatisfaction with unacceptable maternity staff behaviour. It seems the whenua has often been treated with cultural insensitivity, misplaced, left on food trolleys, withheld and denigrated in various ways "... this nurse comes in with this plastic bag and says 'do you want your placenta?' and I just stood there and screamed" (Ora Toa Health Unit, 1992, pg 25; Harris, 1994). Others have experienced family being told to leave, lying in bloodied linen, delayed postpartum cleanup, maternity staff reluctance to provide assistance, whānau making up for service inadequacies, lack of privacy during birth and the tendency for maternity professional to inhibit aspects of whānau behaviour "... although our whānau was present, they were unable to karakia and waiata ..." (Bryant, 1994; Harris, 1994; Midland Health 1994b, pg 5). Furthermore, Harris (1994) found that Māori regarded professional advice on newborn care to be of little value and viewed postnatal maternity staff as lazy, unhelpful, insensitive and sometimes offensive. Although Bryant (1994) found sixty-six percent of Christchurch women received postnatal support from Plunket, the quality of this service was not always satisfactory ... "it's not really the Māori thing .... treated you like a number ... I wouldn't let them into the house because they were so

inconsiderate ... disrespectful to Māori ways ... pushy and intrusive ... it's so clinical ... it was like they were from another world" (pg 60). Both Harris (1994) and Bryant (1994) noted Māori mothers regarded family members and other childbearing women as the best providers of postnatal care.

Women of all cultures have experienced feelings of disempowerment within the maternity setting. It comes as no surprise, therefore, to find Māori have said that maternity service providers excluded them from decision-making and took away their power to make choices (Ora Toa Health Unit, 1992; Bryant, 1994; Harris, 1994; Midland Health, 1994). Ora Toa Health Unit (1992) has encapsulated this view ... "I had strangers telling me what I should be doing without actually asking me ... the midwives weren't looking at us ... they were driven by this is what we have to do ... the only reason we were on our back is because that's where they put us ... " (pg 24). Harris (1994) reported experience of conflict between maternity professionals over decision-making control commonly took place during labour or delivery and failed to include the mother herself. Women have described situations where their feelings and opinions were blatantly ignored or dismissed, they were not allowed to choose the position of birth and were forced to deliver lithotomy. Although some women said they virtually delivered by themselves, others reported giving birth in an environment like 'Grand Central Station' (Harris, 1994, pg 26; Bryant, 1994). Māori have vehemently criticised a childbirth philosophy which allows strangers, albeit medical professionals, to enter the birthing room without prior consent and the tendency for unfamiliar staff to fill-in when preferred professionals are off duty. Many feel that hospital procedures are rigidly routine (Ora Toa Health Unit, 1992; Harris, 1994; Midland Health, 1994).

Notwithstanding the above, it would certainly be misleading to suggest all Māori are dissatisfied with their experience of maternity services. Indeed, several have reported a supportive, caring and friendly atmosphere, sensitivity to Māoritanga, opportunities for informed choice and a holistic view of health (Ora Toa Health Unit, 1992; Bryant, 1994; Midland Health, 1994b). Although some have shown that no single strategy will meet all Māori maternity needs, various attempts to define the parameters of a localised service identified a number of integral themes (Ora Toa Health Unit, 1992; Bryant, 1994; Harris, 1994; Ratima et al, 1994; Midland Health, 1994). Most notable, was the evidence of overwhelming

support for marae based programmes which give female Māori service providers the opportunity to intertwine traditional and professional methods (Ora Toa Health Unit, 1992; Bryant, 1994; Harris, 1994; Ratima et al, 1994). Other recommendations included the establishment of antenatal programmes which not only provide opportunities for practical learning experience but also encourage familiarity with obstetric terminology, intervention techniques and informed choice, including the right of refusal (Ora Toa Health Unit 1992; Harris, 1994). Ngati Toa also identified the importance of continuity between real life experience and institutionally instilled expectations about typical Māori behaviour. From this perspective, the concept of cultural safety incorporated professional awareness of relevant political, social and cultural issues along with the teaching of such things to birthing women themselves. Ora Toa Health Unit (1992) felt the antenatal class may provide an ideal opportunity for Māori to learn about their own birthing ethos.

Various authors suggested Māori use of maternity services would benefit from strategies to improve information delivery (Harris, 1994; Bryant, 1994). To this end, Ratima et al (1994) identified the need for material to be presented via a range of media. Although women expressed a preference for verbal and printed information, desire for video, radio and large group presentation in English, a preference bilingual and total immersion Māori was also evident. Ngati Toa also highlighted the possibility that Māori may find open, frank or direct discussion of intimate material offensive (Ora Toa Health Unit, 1992). The idea that Māori may use a different system to transfer or accumulate information has also been mooted (Durie, 1994). In accordance with this view, several have documented evidence of a preference for both professional and whaanau involvement in the provision of maternity services (Ora Toa Health Unit, 1992; Bryant, 1994; Ratima et al, 1994; Midland Health, 1994b). Indeed, Ratima et al (1994) suggested whanau-based, or informal, networks may be used to disseminate information and highlight matters of significance among childbearing women. During this era, studies of Māori childbirth experience found that whanau support throughout pregnancy, delivery and postpartum was very highly valued and the development of services which facilitated the opportunity whaanau were strongly recommended (Midland Health 1994b). Associated issues included the need for adequate public transport, flexibility in visiting times and the provision of amenities or facilities for whaanau use. Several agreed that an, appropriately chosen, intermediary or advocate may

help to mediate aspects of maternal recovery and wellbeing (Midland Health, 1994b, Harris, 1994; Ratima et al, 1994). Among other tasks, it was suggested the personal advocate may help to ensure relevant information is adequately processed and create a positive atmosphere for childbirth.

In 1991, a group of trainee health management produced an innovative profile of Māori childbirth experience in Auckland (Whakatupu, 1991). The report, based on interviews with 376 women during a two month period, provided an enlightening perspective of childbirth events and incorporated a number of variables overlooked by national data collection procedures. Seven percent of respondents were unsure of iwi affiliation, roughly half belonged to iwi in the northern region, a fifth were from the Waikato, twelve percent came from the East Coast and the remainder were descendants of the West Coast and central North Island. Almost ninety percent of the participants delivered at tertiary Middlemore or National Women's facilities but the remaining births were evenly scattered between low-risk facilities. West Auckland Māori tended to deliver in National Women's, rather than the closer Waitakere facility.

Women from the different regions varied in their use of contraceptive practice. Indeed, three-quarters of the women from South Auckland said they had never used any form of birth control whereas up to eighty percent in other regions had used contraception at some stage prior to the pregnancy under study. Such findings suggested maternal place-of-dwelling influence various aspects of maternal childbirth experience including the place of birth and use of contraceptive techniques.

In addition, this study showed partners were the most common companion for women during delivery, at all maternal age-groups. Almost three-quarters of the women interviewed were accompanied by their partners in the delivery room. In descending order of frequency, mums, dads, sisters, kuia and friends also provided support. Amount of support generally decreased as maternal age-group increased. For example, teenagers had the most support while women aged 30-34 years had the least. Women aged more than 35 years appeared to have more support than those aged 25-29 or 30-34 years. However, differences in the type of support given to women at various maternal age-groups were evident. Teenagers, for example, were most likely to be accompanied by their mother, father, sister and grand-mother while women aged 25-29 years were more likely to have the

support of a partner or friend. Furthermore, partners and immediate family accompanied women aged 30-34 years least and women aged 35 years or over were most likely to have support from a friend, kuia or other person during delivery. Maternal parity did not seem to influence the presence of whānau awhi.

In contrast with the common perception that Māori tend to deliver low birthweight infants, seventy-seven percent of the babies in this study were within normal range (2500-4000 grams) and remaining infants were more likely to weigh over 4000 grams than under 2500 grams.

Additional information was gathered on the position of birth, the claiming of whenua and the availability of postnatal support. More specifically, sixty-two percent of the women in this study delivered in lithotomy position and six percent also had their legs in stirrups. One quarter gave birth while sitting or kneeling and the remaining women were either on their side or in some other position. Thirty-four percent of the participants requested their whenua and those who did so, were generally aged less than 24 years. This finding suggested young, urban Māori were more aware of the significance of whenua but the large proportion of unclaimed placenta raised concern. The vast majority of women said they would have both partner and whanau support to look after baby, but roughly thirty percent did not expect post-natal support from either their partner or whānau.

This chapter has provided a comprehensive review of the knowledge-base which described Māori childbirth experience at the time of study. It is clear that little was known about the use of coping strategies or cognitive appraisal processes during pregnancy and childbirth or the relationship between psycho-social variables and pregnancy outcome. Such issues, therefore, are the subject-matter of the thesis at hand. Towards this end, the following chapter describes the development of *Hōmai te Waiora ki Ahau*, as a tool for the measurement of psychological wellbeing among Māori.

## **Chapter Six**

# **Hōmai Te Waiora Ki Ahau**

### ***A Māori Measure of Psychological Wellbeing***

The previous chapters have drawn together a vast number of studies which share a common underlying theme. In one way, or another, all support the body of literature which has consistently shown that experience of psychological wellbeing during pregnancy and childbirth is good for the health of women and their babies. This has been demonstrated in both qualitative and quantitative terms in a variety of non-Māori settings. A central objective at the heart of this thesis is to bring the fruits of this research into an arena which is appropriate and beneficial for Māori. In this regard, the main hypothesis under study aims to explore whether *waiora*, that is, a Māori construct of psychological wellbeing, is also good for the health of Māori women and their babies. The following discussion describes the development of *Hōmai te Waiora ki Ahau* as a tool for measuring *waiora* among participants in this research. It begins by considering the factors usually associated with psychological wellbeing. This material is contrasted against Māori perceptions which may, more appropriately, be defined by the concept of *waiora* (Pere, 1982). Literally translated, *waiora* describes the seed and source of life, or, the river through which good health, vitality and life itself is nurtured and sustained. Against this framework, it is of interest to consider the various ways in which psychological wellbeing has been measured and objectified. More important, however, is some understanding of the process that was used to select a range of parameters for the definition and measurement of *waiora* in this context. This chapter concludes with the outcomes of a preliminary pilot study on the acceptability of *Hōmai te Waiora ki Ahau* as a technique for measuring *waiora* among Māori women in Hauraki.

#### **The conceptual paradox**

In the early eighties, the notion of well being was rarely heard in social circles within this country, yet, by the end of the decade it had become a household term. No doubt such change is linked to the bold redefinition of health which



appeared in 1947, and again in, 1982, when the World Health Organization proclaimed it was not only the absence of disease but also the presence of positive health and wellbeing (Bowling, 1991; World Health Organization, 1947, 1982). Many of the six thousand submissions received by New Zealand's Royal Commission on Social Policy in 1988 displayed the plethora of meanings which had come to be associated with a concept of wellbeing. Key definitions suggested wellbeing involved a quality of life and a state of contentment or happiness, a sense of dignity and choice, genuine opportunity for personal control and self-determination, freedom from oppression and the right to participation or membership in a safe, positive and functional society. Benland (1988) discussed the involvement of an S-Factor explained as the spiritual dimension, or that intangible quality which links the generations, prevails over difficult situations and gives the inner strength needed to handle difficult encounters. With this slight exception, non-Māori thoughts on the meaning of wellbeing sharply contrasted with the views of Māori.

Various submissions to the Royal Commission highlighted the intricate manner in which Māori wellbeing is irrevocably tied to the resolution of long outstanding Treaty issues (Royal Commission on Social Policy, 1988). Kuni Jenkins also drew attention to the need for processes which combined and joined the physical and spiritual dimensions of everyday life (1988). However, the Commission felt particularly attracted to the idea that four supports, *ngā pou mana*, were the pre-requisites for individual and group wellbeing (Henare, 1988). The *pou mana* were *whanaungatanga*, *taonga tuku iho*, *te ao tūroa* and *turangawaewae*. According to this model, therefore, the main components of health and wellbeing are family, cultural heritage, the physical environment and land. Collectively, it was argued, the interactions between these supportive structures would facilitate the retention of mana, cultural identity, a sound economic base, confidence and a sense continuity. The significance of *ngā pou mana* was readily accepted by Māori.

However, the concept itself had built upon a wave of excitement which had generated, among Māori in response to previous models from a range of influential sources. In particular, the concept of *whare tapa whā*, which emerged in the early eighties, had compared health and wellbeing to the four walls of a house (Durie, 1994, 1998; Murchie, 1984). In this paradigm, wellbeing was firmly linked to *taha*

wairua, taha hinengaro, taha tinana and taha whānau. The focus was on our capacity to benefit from participation in spiritual, mental, physical and social realms. Although wholistic, te whare tapa whā emphasized a spiritual rather than somatic base (Durie, 1998). Taha wairua, for example, implies spiritual awareness and an appreciation of the life-force within all living things. Taha hinengaro is not only about the expression of thoughts and feelings but also the relationship between these factors and the manner or style of emotional processes within both ourselves and our whānau. Taha tinana is partly about physical health but also about attitude, or, the capacity to embrace opportunities for physical health and development. And taha whānau acknowledges the importance of family, however it may be defined, as a fundamental building block of health and source of support, nurturance and identity.

At the University of Waikato, in the early eighties, Rangimarie Rose Pere delivered a popular series of lectures on Māori concepts and learning (1982). This material formed the basis for a slightly different model of Māori wellbeing. At Hui Whakaoranga, in 1984, Rose suggested the symbol of Te Wheke, an octopus, was particularly suitable for conceptualizing the dynamic and multi-faceted inter-relatedness of components associated with Māori wellbeing. She said:

“the head represents the individual/family unit. Each tentacle represents a dimension that requires and needs certain things to help give sustenance to the whole. The suckers on each tentacle represent the many facets that exist within each dimension. The eyes reflect the type of sustenance each tentacle has been able to find and gain for the whole. The intertwining of the tentacles represents a merging of each dimension” (Pere, 1987, pg 61).

Four tentacles reflected the cornerstones of te whare tapa whā but the remaining tentacles embraced concepts of mana, mauri, ngā taonga tuku iho and whatumanawa (Pere, 1987, 1991)<sup>55</sup>. Rose Pere, therefore, suggested that wellbeing involved not only the components of te whare tapa whā but also balanced emotion and an appreciation of divine uniqueness, the life-sustaining principle and highly prized ancestral treasures. Waiora, or total wellbeing, is said to be found when each tentacle, or dimension, receives sufficient sustenance<sup>56</sup>.

<sup>55</sup> In her 1991 publication, ngā taonga tuku iho and Hā (a Koro mā a Kui mā) were in the same category.

<sup>56</sup> In 1991, Rose Pere suggested te wheke was influenced and sustained by te aorangi (the universe), te roha (unconditional love), te reo (language), kāinga (an abode); whare kura (a place of learning), whenua (land), tikanga (applying what is right), tangata mauri (political processes), hakari (gift or entertainment), tapu (protection), ohaoha (economics), hui (opportunity to congregate), marae (village common), kai

Others have also made valuable contributions to the debate on Māori wellbeing (Barrett-Aranui, 1981; Rangihau, 1977; Walker, 1990). However, the eloquent framework presented by Te Rōpu Awhina ō Tokanui at the 1986 Australian Congress of Mental Health Nurses in Adelaide warrants particular mention. This work is described as an oral art gallery of life and it truly is. The group painted word pictures and framed murals of thought with seductively subtle oratory skill. The tone and rhythm of poetic chants created vivid mental images and a sense of timeless balance between vulnerability and strength. As a symbol, the concept of a gallery was used to define nine main components of Māori wellbeing. Once again taha wairua, taha whānau, taha hinengaro and taha tinana are essential dimensions. In addition, Te Rōpu Awhina ō Tokanui incorporated the galleries of taha Māori (the old world); taha Pākehā (the new world); taha tangata (the world of people); taha whenua

“eczema brown deserts, velvet jungle greens, gold-edged shores, cloistered trees, undulating horizons, rugged and ragged hills, snow-covered mountain breasts, water mirrors ... without it we are bereft, rootless, landless and tribeless...” (1986, pg 12)

and taha tikanga:

“the yardstick for protocol, the social measure for etiquette, the mystical demarcation of sacred from the profane ... it is like astral flying at multiple levels: each boundary mentally framed, each intersection demanding rituals, each area littered with pitfalls ... it is achieving the gauntlet race through experience and concentration ... it encourages mutual respect and lightens the loads of life-losses...” (1986, pg 15).

Two years later, the authors of this work prepared an additional presentation which associated various dimensions of psychological wellbeing with specific colours (Elliott, 1988).

### **Established measures of psychological wellbeing**

Against this background, it is interesting to consider theoretical pedagogies which have primarily shaped the measurement and quantification of wellbeing. In 1969, for instance, an American psychologist published a highly influential textbook on *The Structure of Psychological Wellbeing* (Bradburn, 1969). This

(sustenance), turangawaewae (a place to stand with confidence), mahi-a-rongo (peaceful pursuits), tangihanga (ceremonial mourning) and noa (freedom from protection or restriction).

book suggested wellbeing could be measured in terms of the extent to which good feelings predominated over bad. The resultant Affect Balance Scale contained ten items comprising five positive and five negative indicators of affect. In lay terms, affect means feelings or emotions. On a scale of one to five, respondents were expected to indicate the extent to which they had experienced these feelings over the past few weeks. Bradburn's affect balance theory has clearly had a significant influence on the field of wellbeing research (Acock & Hurlbert, 1993; Black-Olien, 1993; Bowling, 1991; Brazier et al, 1992; Connidis & McMullin, 1993; Friedman, 1993; Hunt, 1993; Jacobson, 1993; Jenney & Campbell, 1997; Judge & Hulin, 1993; Kerr & Vos, 1993; McCallum et al, 1993; Muller et al, 1993; Nathawat, 1993; Rodd, 1994; Scott, 1999; Sistler & Blanchard-Fields, 1993; Solomon et al, 1993; Stewart et al, 1988; Te Puni Kokiri, 2000b; Thomas et al, 1984; Zika & Chamberlain, 1982).

Within this country, during the late seventies and eighties, a group of psychologists at Otago University were working towards the development of a wellbeing measure which came to be known as the Affectometer (Flett, 1986; Kamman, 1983; Kamman & Flett, 1983, 1986; McIntosh, 1985). The second version, Affectometer 2, is a ten item inventory which measures experience of positive and negative affect over the past few weeks. Wellbeing is defined as a predominance of positive or good feelings such as those of completeness, satisfaction, cheerfulness, energy and freedom; a sense of purpose and control and the feeling that life is meaningful. Over a period of about ten years, meticulous attention was paid to issues associated with the reliability and validity of Affectometer as a measure of wellbeing. In this regard, therefore, Affectometer 2 has demonstrated a high degree of test-retest reliability and concurrent validity with a range of other wellbeing measures. It also seemed less sensitive to objective circumstances, such as changes in the environment and even day-to-day mood. And it was shown to be a good predictor of depression, anxiety, neuroticism, psychosomatic distress and happiness. Above all, however, Affectometer 2 displayed an outstanding level of internal consistency. At 0.9 the alpha coefficient suggested a much higher level of internal consistency than other wellbeing measures. A collection of studies have administered Affectometer 2 in a range of contexts (Barry, 1989; Colhoun, 1988; Colhoun & Maxwell, 1985, 1986; Flett & Biggs, 1993; Gill, 1984; Maxwell, 1987; Maxwell et al, 1990).

Attitudes to the measurement of psychological wellbeing clearly changed in the early nineties as worldwide enthusiasm shifted to the more comprehensive notion of general health or health related quality of life. For the concept of psychological wellbeing, this change seemed to occur at the worst possible time. Indeed, a vast number of the above-mentioned studies had been rigorously exploring the various ways in which an affect-based measure of psychological wellbeing might influence, or relate to other variables like, for example, personality, self-esteem, social interest, goal achievement, satisfaction, life change, social support and stress (Acock & Hurlbert, 1993; Connidis & McMullin, 1993; Friedman, 1993; Hunt, 1993; Jacobson, 1993; Judge & Hulin 1993; Kerr & Vos, 1993; Muller et al, 1993; Rodd, 1994; Zika & Chamberlain, 1992).

The thrust of this effort to improve the reliability and validity of psychological wellbeing measures was thwarted by the shift in conceptual focus. In the quality of life and general health measures, psychological wellbeing is conceptualised as one of several inter-related functions all of which are seen to contribute to an individual's sense of overall wellbeing. For example, the popular General Health Questionnaire measures physical functioning, role limitations, social activities, mental health, health perceptions and experience of pain or problems (Nathawat, 1993; Shams & Jackson, 1993; Stewart et al, 1993). Similarly, the Medical Outcomes Study (which later became known as the Short Form Health Survey or SF-36) contains six multi-item dimensions which measure physical functioning, role functioning, social functioning, mental health, health perceptions and pain (Brazier et al, 1992; McCallum et al, 1993; Solomon et al, 1993; Stewart et al, 1988). It is interesting to find that mental health became the new term for psychological wellbeing. Even more interesting, however, is the discovery that measurement of mental health, in both SF-36 and other quality of life (QoL) instruments, has relied heavily on the experience of affect or emotion over the past few weeks (Jenney & Campbell, 1997; Scott, 1999; Solomon et al, 1993).

Along with other countries throughout the world, New Zealand has invested a considerable amount of time, energy and money in the use of SF-36 techniques to measure general health status and wellbeing (Relvin 1999; Scott, 1999; Taylor & McPherson, 1999; Wright & Doughty, 1999). A number of Māori health researchers have also demonstrated support for SF-36 methodologies (Coupe et al, 1998; Kokaua et al, 1995; Reid & Keefe, 1997; Te Puni Kokiri,

2000b). However, a paper on the usefulness of this technique for measuring Māori wellbeing suggests three of the whare tapa whā cornerstones are well represented but taha wairua does not seem to be captured by SF-36 at all (Kokaua et al, 1995). Various medical journals have published evidence of intense debate about the validity and/or reliability of QoL versus SF-36 techniques (Christie, 1995; Fayers, 1995; Glass & Walker, 1995; Price & Harding, 1995; Scott, 1999; Taylor & McPherson, 1999; Wright & Doughty, 1999; Toffler, 1995). It seems both approaches have methodological problems.

## Hōmai te Waiora ki Ahau

This section describes the development of *Hōmai te Waiora ki Ahau* as a tool for the measurement of psychological wellbeing among Māori. This instrument has clearly drawn upon foundations established in the above-mentioned models of Māori wellbeing (Durie, 1998; Henare, 1988; Pere, 1991; Te Rōpu Awhina o Tokanui, 1986).

**Table 6.1: Components in the four main models of Māori wellbeing**

Whare Tapa Whā	Te Wheke	Te Rōpu Awhina o Tokanui	Ngā Pou Mana
Whānau Wairua Hinengaro Tinana	Whanaungatanga Wairuatanga Hinengaro Tinana Mana Ake / Mana Mauri Hā / taonga tuku iho Whatumanawa	Whānau Wairua Hinengaro Tinana Whenua Tikanga Māoritanga Pākehātanga tangata	Whanaungatanga Taonga Tuku Iho Te Ao Tūroa Turangawaewae

Table 6.1 summarizes the components of te whare tapa whā, te wheke, ngā pou mana and the model presented by Te Rōpu Awhina o Tokanui. Common elements are evident. In particular, all acknowledge the importance of whānau or whanaungatanga and three identify wairua, hinengaro and tinana as essential sources of wellbeing. A further commonality is the principle of inter-relatedness which is emphasized by the authors themselves and the symbols chosen to portray each model. Thus, the capacity to benefit from whanaungatanga, wairua, hinengaro and tinana is clearly linked to experience of, for example, taonga tuku iho, turangawaewae and/or whatumanawa. Similarly, the capacity to benefit from taonga tuku iho is not only associated with experience of whanaungatanga, wairua, hinengaro and tinana but also Māoritanga, tikanga, whenua and mana.

Perhaps this is why Rose Pere presented the notion that waiora was a river of life-giving forces. In the use of this metaphor, Rose provided an image of infinite capacity to disperse wellbeing through the ebb and flow of multiple complementary and integral processes (1984).

After a lengthy period of discussion with various mentors in a range of academic and community settings, it was decided *Hōmai te Waiora ki Ahau* would comprise twelve components: whanaungatanga, tinana, hinengaro, wairuatanga, mauri, whenua, mana, whatumanawa, tikanga Māori, tikanga Pākehā, te ao tawhito and te ao hou (personal communications with Hirini Maika, Maanu Paul, Godfrey and Toroa Pohatu, Denise Messiter, Janie Poutu, Mereana Pitman, Hinemanu Tooman, Te Kawero, Te Rauhina, Toni Silver, Tumohe Clarke and Beth Anderson in Dunedin, Hamilton or Hauraki during 1989-1994). It was felt these twelve components broadly encompassed all of the variables identified in the four main models of Māori wellbeing. *Hōmai te Waiora ki Ahau*, therefore, simply aimed to provide a mechanism for measuring the key components of Māori wellbeing. It was clear, however, that such a mechanism must not allow the concept of waiora to be fragmented into twelve separate and distinct variables but should, instead, ensure that waiora continues to be seen as a wholistic construct comprising a collective of intrinsic and integral components.

### ***The twelve components of Hōmai te Waiora ki Ahau***

A major challenge, in the development of this instrument, was the need for a technique which enabled each waiora concept to be understood, and measured, even when respondents felt unable to communicate in te reo Māori<sup>57</sup>. In communications with indigenous people, the literature has demonstrated the value of visual, aural and tactile mediums and/or a combination of mediums which use colour, symbols and shapes to portray concepts that have meaning within a culturally appropriate epistemology (Jahoda & Lewis, 1988). In an attempt to bridge the gap which may have existed because of perceived inadequacies in te reo Māori, therefore, two local artists were asked to draw pictures which could assist an explanation of the twelve waiora components<sup>58</sup>. These were added to a series of pictures which had been commissioned by the Department of Health to describe

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<sup>57</sup> In Māori social circles, it is often said that Māori people have an inherent ability to speak and understand te reo because it is a taonga tuku iho. The suggestion is that the door to understanding will be easier if the right key is used.

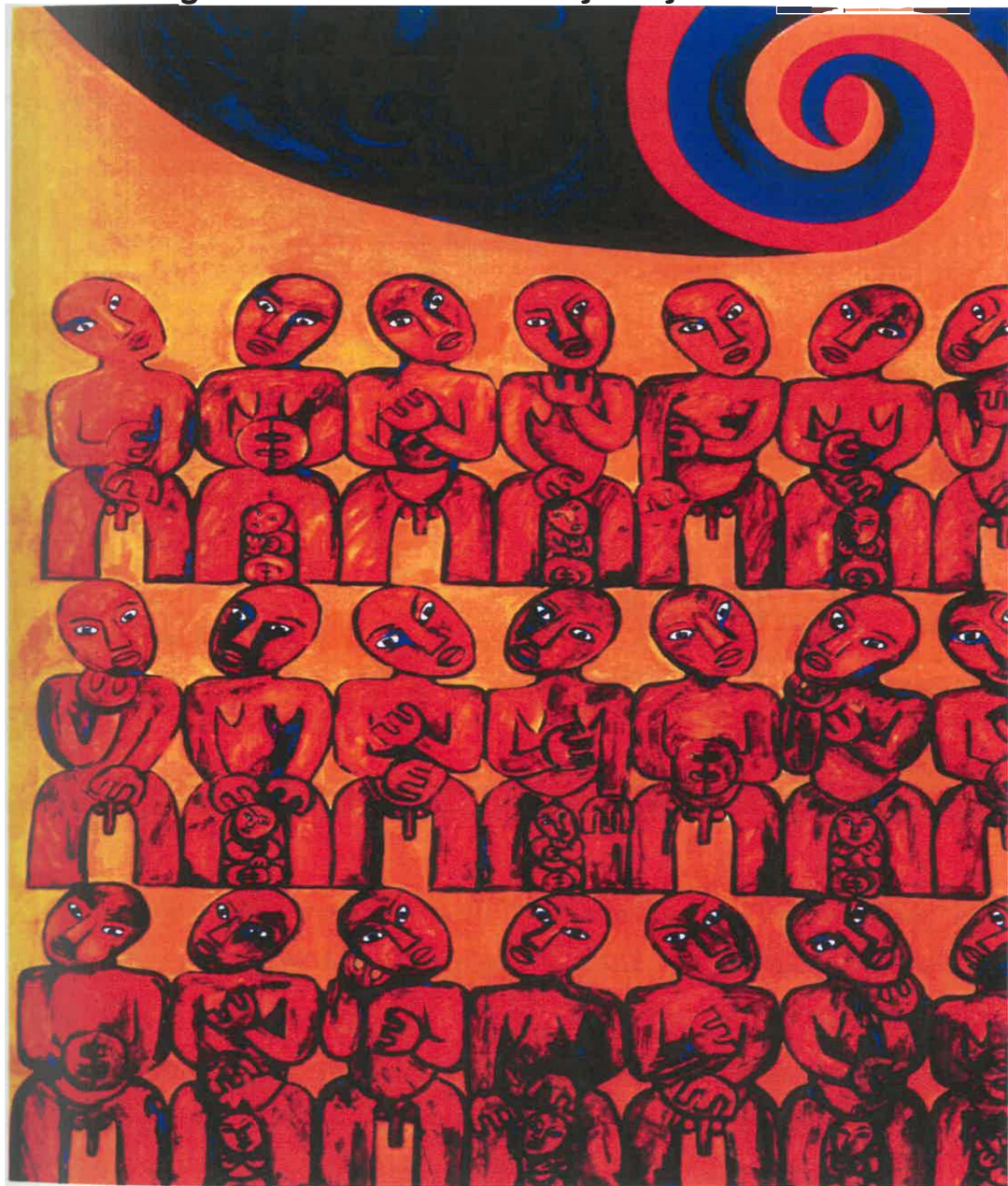


the four components of *whare tapa whā*, that is, *taha whānau*, *taha wairua*, *taha hinengaro* and *taha tinana*<sup>59</sup>. The following section summarizes the manner in which these pictures were used to explain and present the twelve components of *Hōmai te Waiora ki Ahau*.

### Whanaungatanga

Whānau means to be born and it is the people to whom we are born. Whakawhanaungatanga is the process of making family. Two illustrations help to describe the concept of whanaungatanga.

**Figure 6.1: Te Taha Whānau by Robyn Kahukiwa**



<sup>58</sup> Tumohe Clarke (Ngāti Koroki, Ngāti Tipa and Ngāti Haua) and Elizabeth Anderson (Ngāti Haua-Whanganui River, Tuwharetoa and Ngāti Maru- Taranaki).

<sup>59</sup> These pictures were drawn by Robyn Kahukiwa of Ngāti Porou.



The first picture depicts the ideal of whanaungatanga. It reminds us that whānau is an eternal bond, a blood bond, which embraces everyone who has descended from a common ancestor. Within the ideal whānau, each generation carries the key to the future, each new baby is source of strength and pride, kuia and kaumatua are revered repositories of knowledge and wisdom which links the living world to generations past. Members of the whānau co-operate and co-exist as they collectively strive towards the future. In this picture, the whānau is bathed in a warm yellow glow which represents the waiora to be gained from the experience of whānaungatanga. The whānau provides a sense of belonging, it provides protection, guidance, leadership and safety, it is a source of understanding, love and support.

**Figure 6.2: Whanaungatanga by Tumohe Clarke**



The second illustration suggests our experience of whānau may be influenced by the powerful force of Marama, the moon. On one hand, a symbol of enlightenment, understanding and strength. On the other, unpredictable, melancholy and disruptive. This picture draws attention to the emotional agony and pain which may be experienced within whānau. The two central figures are parents with the lives of their offspring unfolding beneath them. The waiora of whanaungatanga is not felt by all. To varying degrees, most of the children remain

connected to the parental core but some have broken away and others are in the process of breaking away. One figure, shaded blue, has separated completely leaving a jagged edge of emptiness where a family member should be found. Another has transformed into a different shape suggesting a different value system and lifestyle. These images remind us that our experiences of whānau may also involve feelings of alienation, misunderstanding, unresolved conflict, hostility and pain. The green colour which saturates the base of this whānau represents those who belong but no longer reside in the living world. The wound within the main body, for example, represents the death of a child. Whanaungatanga for this whānau has clearly involved experience of sadness, grief and tragedy.

### Tinana

Taha tinana is the realm of our physical selves. The visible body which serves to shelter and protect an invisible spiritual soul. Through tinana we inherit the genetic pool of our ancestors, this has an influence on our shape, looks and size. Tinana keeps the physical attributes of our tipuna alive. Two illustrations portray the waiora of tinana.

**Figure 6.3: Te Taha Tinana by Robyn Kahukiwa**





The first picture displays the gift of a physical self – man or woman, tamaiti or rangatahi, pakeke or kaumatua. Tinana swells and transforms to reflect each stage of the life cycle, we all traverse the pathway of physical development and growth. Tinana is our flesh and bones, our ability to function, our capacity for life. Good health and wellness is a taonga and we are lucky if our lives are free from illness and disability.

**Figure 6.4: Tinana by Tumohe Clarke**



In the second picture, the paatikitiki, or flounder shaped pattern, symbolises wealth and abundance. A functioning body is seen as a gift, tinana is the gift of life. The poutama, or symbolic stairway, represents our ability to seek out the treasures of tinana. This picture reminds us that good health needs to be nurtured. There are many ways to abuse tinana and we climb the poutama towards good health in many different ways. Some prefer to stand still or turn away. Others walk or run up the poutama of tinana, it requires stamina and endurance, we do it at our own pace and the pace may change at different stages of life. The waiora of tinana is easily seen,

it is in our feelings about ourselves, it is whether we feel good or bad about our physical self.

### Hinengaro

Hinengaro refers to all that happens within the mind. It involves the intangible qualities of knowledge, wisdom, memory and intelligence. It is the way we think, our attitudes and ability to understand, the manner in which we comprehend and experience events. It is our sense of humour or justice, our motivation and desire, sensuality and intuition, the force which drives our creative, practical, logical and sensitive selves. Hinengaro is referred to as “te huarahi rapu nei i te maramataka” ... the pathway that seeks enlightenment. Hinengaro is the thinking side of a physical self.

**Figure 6.5: Te Taha Hinengaro by Robyn Kahukiwa**



The first picture associates hinengaro with women, in this case, a woman with many different things on her mind. Within hinengaro, it is clear that *hine*



describes an obvious and visible femaleness whereas *ngaro* describes something which is out of site, undetected or secret. This combination of words may refer to manner in which our minds are influenced by conscious (obvious) and subconscious (hidden) characteristics. Or this combination of words may refer to the manner in which women have a subtle power to influence the thinking of men and children even though such power may be hidden within the home or bedroom. This image draws attention to the manner in which women are often left to carry the burden of important every day decisions about, for example, money, food, children, relationships, education and health. The second illustration portrays the waioara of hinengaro as a droplet falling from a river into the depths of our minds. The river symbolises wisdom and knowledge, the droplet describes the way in which an idea or thought is conceived, the spiralling koru represents an infinite capacity for intellectual growth and development. The ta moko indicates the status and mana which can be gained from taking the time to experience the waioara of hinengaro.

**Figure 6.6: Hinengaro by Tumohe Clarke**



## Wairuatanga

Wairua is a spiritual influence in a physical world. People say “the wairua have left her” to explain a sudden change in personality. “I threw my wairua out to the whānau” may be used to explain the coincidence of a much needed visit. “My wairua told me something was wrong” may describe an uncanny atmosphere or an intuitive feeling of danger and “they beat up her wairua” may help us to see the otherwise invisible effects of gossip and verbal abuse. Wairua gives meaning to the spiritual dimension. Two illustrations may help to describe the waiora which may be found within experience of wairuatanga.

**Figure 6.7: Te Taha Wairua by Robyn Kahukiwa**



Literally translated, the concept of wairua, encapsulates the words “wai” meaning water, river or influence and “rua” which generally means two. The first



picture depicts wairua as a person flanked by two kaitiaki, two guardians from the spiritual world. They are sitting upon this person's shoulders in a posture which symbolizes their presence at all times. In this light, wairua can be seen as two rivers which influence our day-to-day life, one flows from our maternal ancestors, the other stems from our paternal side. Wairua would seem to be a protective shield which guards against harm and gives us the skills to negotiate life. Wairua can also be conceptualised as a tug-of-war between two opposing forces. One force being positive, benevolent and good. The other negative, mischievous and bad. Wairuatanga, therefore, is the manner in which we walk the pathway between two such forces. It is way the balance between our physical and spiritual lives.

**Figure 6.8: Wairuatanga by Tumohe Clarke**



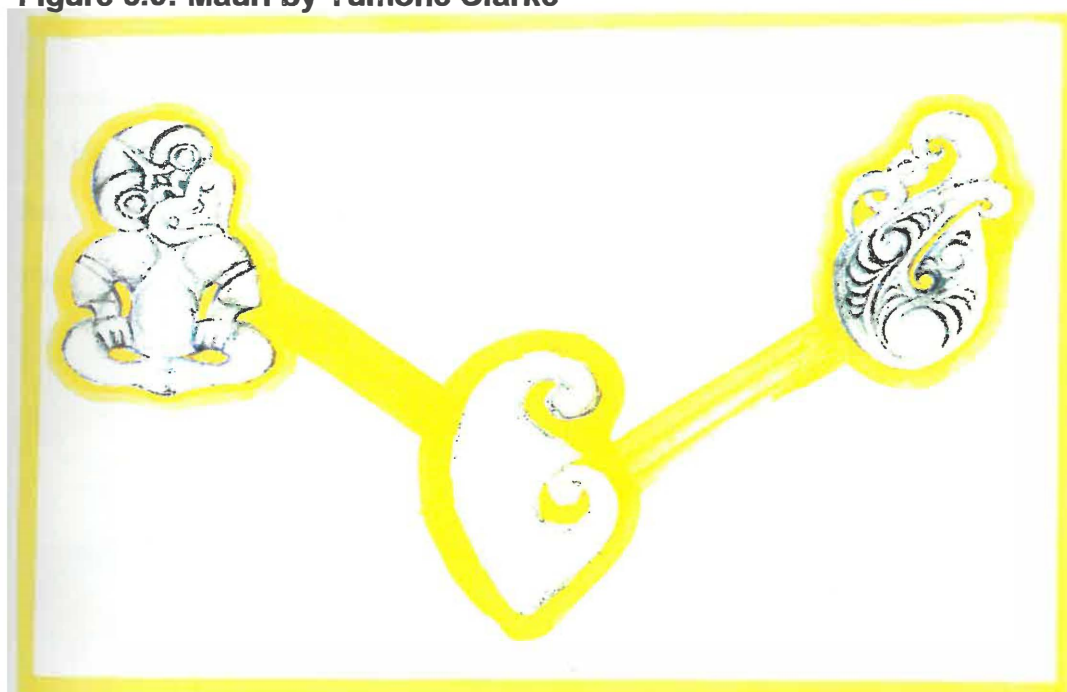
The second illustration draws attention to the rituals associated with wairuatanga and the ways in which we try to allay fears and/or encourage a beneficial influence. For example, we use the processes of karakia, waiata, meditation and korero to draw strength, seek guidance and enlightenment and ensure a collective focus upon the particular task at hand. In this particular instance, a labouring woman is surrounded by symbols for various forces which she can draw upon to fortify her wairua. In the four corners, the spiritual forces of

earth, wind, fire and air are found. The koru, grasped on both sides, represents her need for emotional support and inner strength during this period of turbulence. To the left, a manaia indicates the presence of ancestral guardians who remind the woman that she is not alone. The manaia supports an enormous spiralling pitau, a token of spiritual endorsement for the creation of new life. Within the pitau womb, a tiki is waiting to bestow luck and good fortune upon the newborn child. Although we are not always able to feel it, the waiora of wairuatanga is available to us all.

## Mauri

In the simplest image possible, mauri can be seen as the miracle which occurs at the moment of conception, “tihei mauri ora”, new life begins to form. Mauri is a life-force, a divine essence, a sacred aura which radiates from and resides within all things. It is the essence of life.

**Figure 6.9: Mauri by Tumohe Clarke**



This picture describes a number of ways in which we experience the waiora of mauri. The central koru represents a mother and suckling child. Mauri is the child's outright will to survive. This image projects mauri as a vibrancy, a will to live, a vibrant glow of aliveness which comes from deep within. The manaia, to the right, reminds us that mauri is a sacred and divine essence which began with the dawning of creation, it is the first breath of life, the origin of all life and the



principle of life which separates the living from the dead. The hei-tiki represents the way in which an inanimate object can come to have mauri. In this case, for example, the hei-tiki may have been within a family for generations. Over the passage of time and in the passing of hands, it has become a precious and powerful heirloom. Indeed, it is a treasure which has come to house the life-force of that family. Mauri, therefore, can lie within inanimate objects – a fertility symbol, a gemstone, a computer, a collection of power pylons. Inanimate objects can emanate mauri. The yellow beam of light which surrounds these symbols is intended to suggest connectedness, a sense of inter-dependency, the way in which the mauri of one thing can influence the life-force of others. Mauri is a universal life-force which envelops all things within the living world. Mauri reflects a collective life-force, it is the interface between humanity and the environment.

### Whenua

The concept of whenua describes the relationship between people and the land. Literally speaking the word whenua is used to when talking about the placenta, or afterbirth, and land. The role of both is to shelter, protect and sustain. In Māori cosmogony, the feminine principle of whenua is personified by Papa-tu-a-nuku, the primordial earth mother from whence all human life came.

**Figure 6.10: Whenua by Tumohe Clarke**



Two of the following illustrations portray whenua in her maternal form, as Papa-tu-a-nuku, the mother earth. The mountains are her breasts, the rivers her tears, Papa-tu-a-nuku is both Aotearoa and the planet earth. She is enveloped in a yellow glow which signifies the waiora which can be found within whenua.

**Figure 6.11: Whenua by Tumohe Clarke**



The third illustration challenges us to think about the manner in which our contemporary, industrial and technological world has impacted on the waiora of whenua. The picture draws attention to the changing attributes of whenua, from bush-clad wilderness to bare mountains, industrial zones, cities and sewerage pits. The multi-coloured hills represent the way in which precious minerals are continually threatened with exploitation and mining. The pito is used to draw a parallel between earth mother and human mother. The human pito which connects a mother to her child (the umbilical cord) is compared with the earth's pito, the



roots of plants and flora, which connect Papa-tu-a-nuku to her ubiquitous offspring. Through this medium, nutrients and waste-products are exchanged between mother and child. The grey-black edging suggests the role of pito is being poisoned by numerous aspects of the modern world – smoke, smog, pollution, pesticides, preservatives, additives, drugs, alcohol.

**Figure 6.12: Whenua by Beth Anderson**



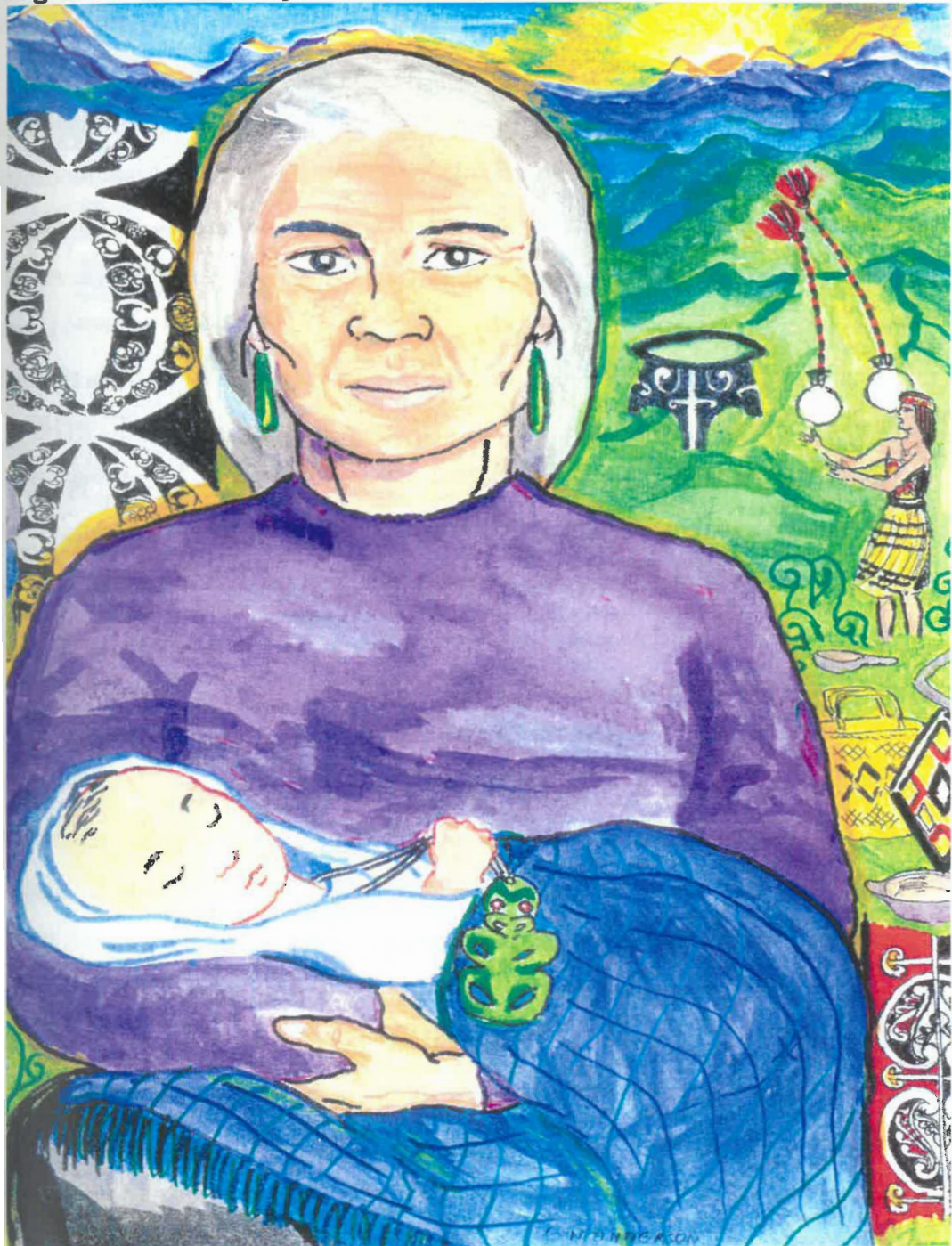
## Mana

Mana is derived from many sources but the concept itself is generally conceived in terms of status, prestige, authority and influence. Mana can belong to an individual or a collective of people. The kuia and mokopuna depicted in this picture provoke many thoughts about mana. Together they bask in a beneficial



silver glow which denotes the waiora to be gained from experience of mana. In the background, we see many factors which have contributed to the mana of this kuia. The moko pattern, beside the poi, symbolizes the concept of inherited mana. In some cases, the circumstances of our birth give us a special status. We may be of a particular bloodline, we may be the eldest or youngest, we may be chosen above others for a specific task. This kuia, for example, has chosen to give her mana to the mokopuna in her arms rather. Mana can be inherited by virtue of our bloodline, our position in the family or the circumstances of our birth.

**Figure 6.13: Mana by Beth Anderson**



The hei-tiki clutched within the baby's hand can interpreted in two ways. Firstly, it is a precious heirloom which may represent inherited mana. Alternatively, the hei-tiki itself is a symbol of luck and good-fortune. Against the yawning sunrise the hei-tiki, in this context, may represent the concept of mana atua – an inherent mana which is carried by each and every newborn child as a divine right. The inherent mana of human life. The black and white kowhaiwhai introduces a component of mana atua. It is the mana derived from gender. This pattern, marama, symbolizes te whare tangata as a source of mana for women. It is inherent because it is an attribute with which we are born.

Surrounding the kuia are various artefacts which represent the mana she has acquired in life. Through her knowledge of poi, karanga, kete, tukutuku, marae protocol and hospitality she has developed tremendous skill and expertise. These symbols indicate the way in which mana may be acquired through merit of our achievements and knowledge. In a similar manner, we can acquire mana through our behaviour, our capacity for compassion, understanding, common sense or leadership. Acquired mana is vested in us by other people, it is a reflection of our position within the community, in recognition of our natural talents and abilities. The opportunity to acquire mana is available to anyone, at any level of society, from corporate manager to street cleaner, it is not about money or power but an acknowledgement of our contribution to the wellbeing of our community.

### **Whatumanawa**

In te reo Māori, whatumanawa is a translation of the word emotion. It is an interesting combination of concepts. Whatu translates as the eye, the core, the anchor, the victim. Mana is about status and influence. Wa is used to talk about a space, time or place. The suffix, manawa, translates as the belly, bowels, heart, breath or spirit but this word is clearly associated with deep emotion. Manawa-kino, for example, indicates an uneasiness or apprehension. Manawa-pa suggests grudging reluctance, anxiety or regret and manawa-wera refers to feelings of excitement or anger. The linking of “whatu”, “mana” and “wa” would seem to the way in which we express our emotions may be the core of mana, perhaps this is the place where mana is truly found, perhaps our mana is displayed in the way we express our emotions. We can, for example, be stricken with grief, overcome with joy, obsessed with jealousy, driven by rage, preoccupied with love, consumed with

fear, wallowing with sadness. The concept of whatumanawa suggests that emotion is an important vital component. The use of this concept acknowledges that our emotional life would seem to be an anchor around which the rest of our behaviour revolves. The intensity of emotion reaches deep within our bowels, it can cause us to shake and tremble, make our hearts race, our blood boil, our mouths dry, we can freeze with fear, go white as a sheet or flush red as wine.

**Figure 6.14: Whatumanawa by Tumohe Clarke**



This picture depicts, whatumanawa as a series of facial expressions. The image provides a dramatic reminder of the intensity of emotional life. The face displays feelings of sadness, grief, anguish, pain, hostility, anger, rage. Although whatumanawa involves the capacity to experience many different emotions, the

cross which passes down this woman's face implies that waiora is found when we are at peace with our emotional life. In this way, it would seem that whatumanawa involves the ability to not only express but also understand our emotions. And most of all, it seems the waiora to be obtained from whatumanawa is found when we have the capacity to experience all emotions, when our emotional life provides a sense of balance.

### Tikanga Māori and Tikanga Pākehā

The word tikanga is often translated to mean customs, etiquette and/or protocol. It is the ceremony and process, the rules and regulations, the norms and expectations which govern our behaviour and interactions with others. Tikanga is defined by the groups and societies to which we belong, it reflects our beliefs, our values.

Tikanga is a code of ethics, it provides the blue-print for judging rightness and the model for acceptable, appropriate and proper behaviour. In te reo Māori, the word "tika" implies correctness, a sense of that which is legitimate, justified and right. Tikanga, therefore, is the process of applying what is right in a given context. The process of performing customs which are seen to be right for a particular occasion. Among Māori, tikanga is lore. Tikanga reflects wisdom and knowledge. It is a mechanism which fosters wellbeing and has the capacity to pacify, strengthen and calm all things which may have been disturbed or could be disturbed, both physical and spiritual. It is the process through which wrong can be rectified, tension can be dissipated, disputes can be resolved and grievance can be redressed.

Four pictures help to describe the waiora which may be gained from experience of tikanga Māori and tikanga Pākehā.

The first illustration depicts a well-known feature of tikanga Māori, the powhiri. The yellow light which floods the wharehau signifies the sense of spiritual, emotional and physical sustenance which may be gained from participation in the tikanga associated with powhiri. The wharehau promises warmth, protection and hospitality. Many aspects of this picture highlight the more traditional characteristics of tikanga Māori. The poupou, for example, depicts the balance which is to be found between male and female elements. The kuia and koro signify the importance of kaumatua as leaders, repositories of knowledge and role models for younger members of the whānau. The young child accompanies his kuia in



order to observe and learn about tikanga. Within the picture, the kowhaiwhai and whakairo remind us of the many different ways in which Māori can and do express tikanga.

**Figure 6.15: Tikanga Māori by Beth Anderson**

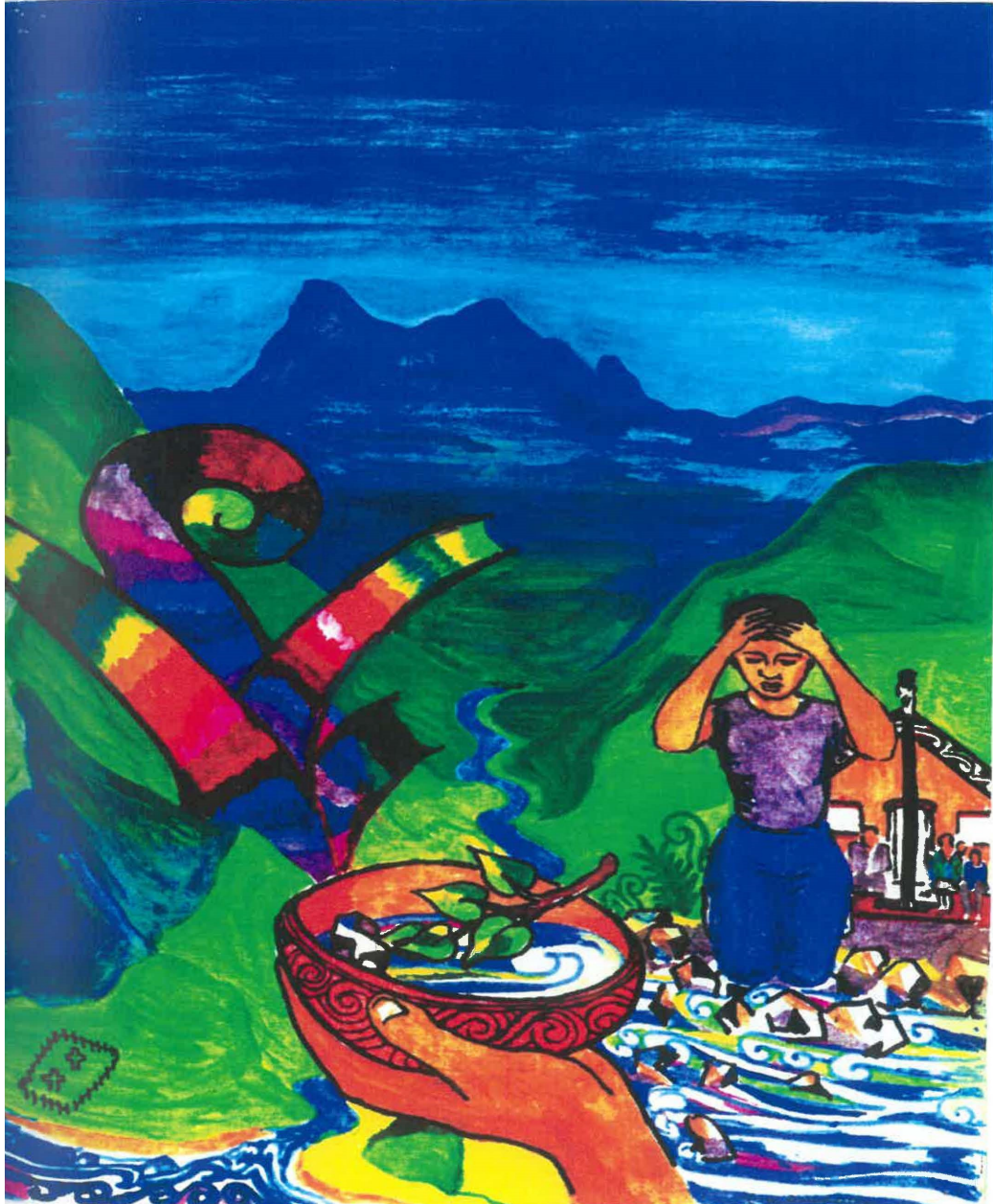


The second illustration also depicts the waiora which may be gained from experience of traditional tikanga Māori. The multi-coloured ponga represents the many generations who have adhered to the practices of whakatapu and whakanoa. Tapu provides an important form of social control which distinguishes the sacred, protected and special from that which is to be enjoyed as part of everyday life. This



girl has come to the river to cleanse herself of tapu. Perhaps it is the sacredness of childbirth to which tribute is paid, maybe she comes to cleanse herself of a past experience or prepare for a new beginning. Various implements used to instill tapu and noa are displayed. Water has the capacity to cleanse, purify and renew, the kawakawa sprig represents the life-giving force of mother earth, the rock contains healing qualities. In the background, her whānau gives support and encouragement.

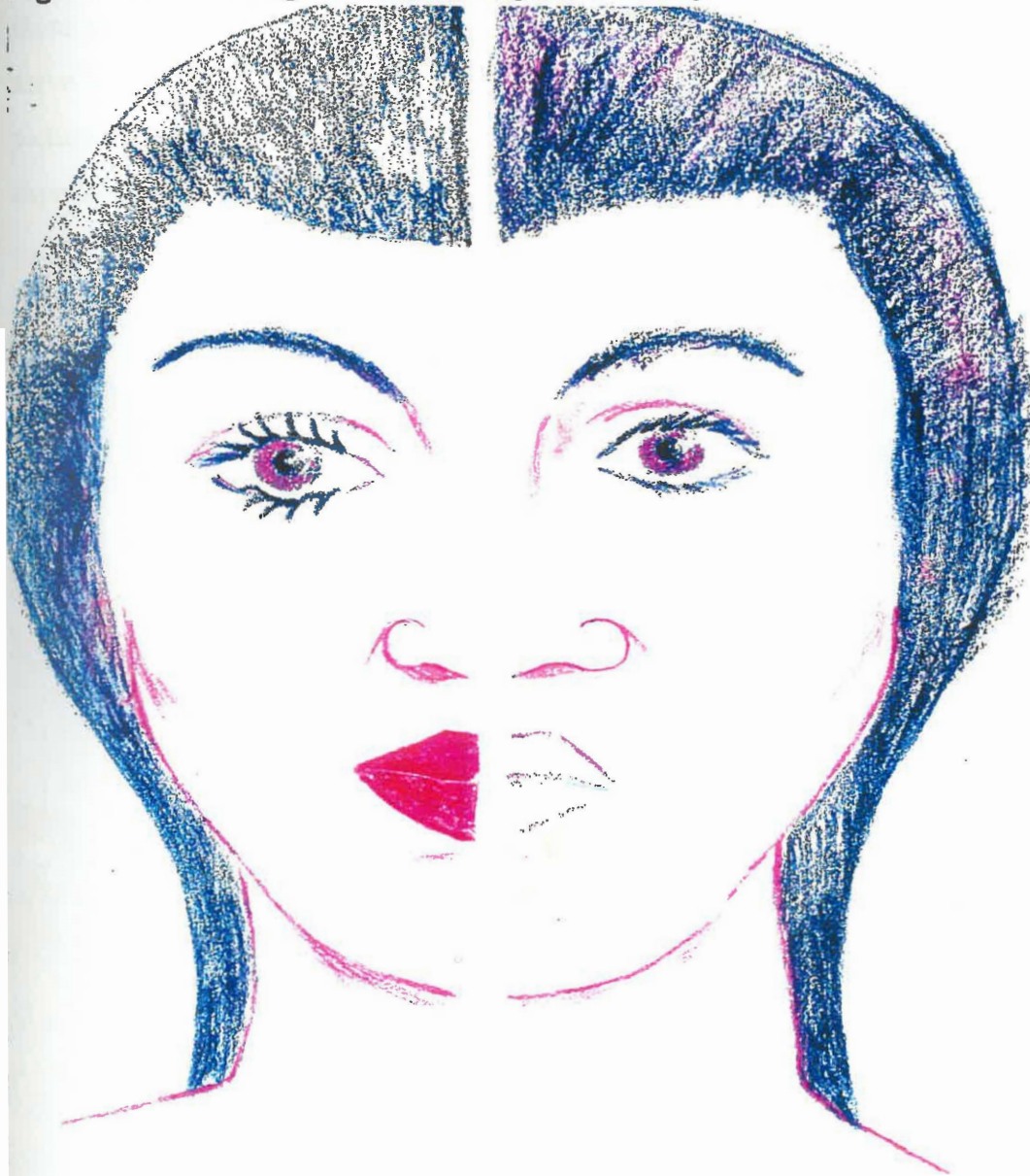
**Figure 6.16: Tikanga Māori by Beth Anderson**



The third illustration describes the way in which many of us experience a relationship with tikanga Māori. We can choose whether to follow tikanga Māori

or tikanga Pākehā in our daily lives. We may ask ourselves, “which face am I to wear today?” Our choice has an influence on what we say, what we do, what we wear, what we see, who we mix with, where we go, our manners, our behaviours, our personal protocol, our values and beliefs. This picture simply highlights a difference between the two types of tikanga. It does not imply that either is better than the other. The ability to fully participate in both cultures is important for Māori, both are a source of waiora.

**Figure 6.17: Tikanga Maori, Tikanga Pakeha by Tumohe Clarke**



The fourth picture provides another perspective of tikanga Māori. Although we still reside within the realm of Papa-tu-a-nuku and Rangi-e-tu-nei,



new values and norms for behaviour have replaced the old. This new tikanga is neither Pākehā nor Māori yet a combination of both. Our struggles to survive in a competitive and materialistic modern world have led many to a lifestyle which revolves around crime, dependancies and abuse. New leadership models have emerged, violence and aggression can dominate our lives, women and children are too often abused, nothing is protected or sacred. Not even the peaceful fernfrond of Haumiatikitike can offer refuge from the stormy new protocols which have evolved. It is clear that the protection of mana is often the foundation upon which these new tikanga have been built but the consequences of our behaviour often serve to perpetuate a cycle of disadvantage and hardship within our whānau. This picture asks us to think about the waiora which we have gained from our own experience of tikanga Māori and tikanga Pākehā.

**Figure 6.18: Tikanga Māori, Tikanga Pākehā by Beth Anderson**

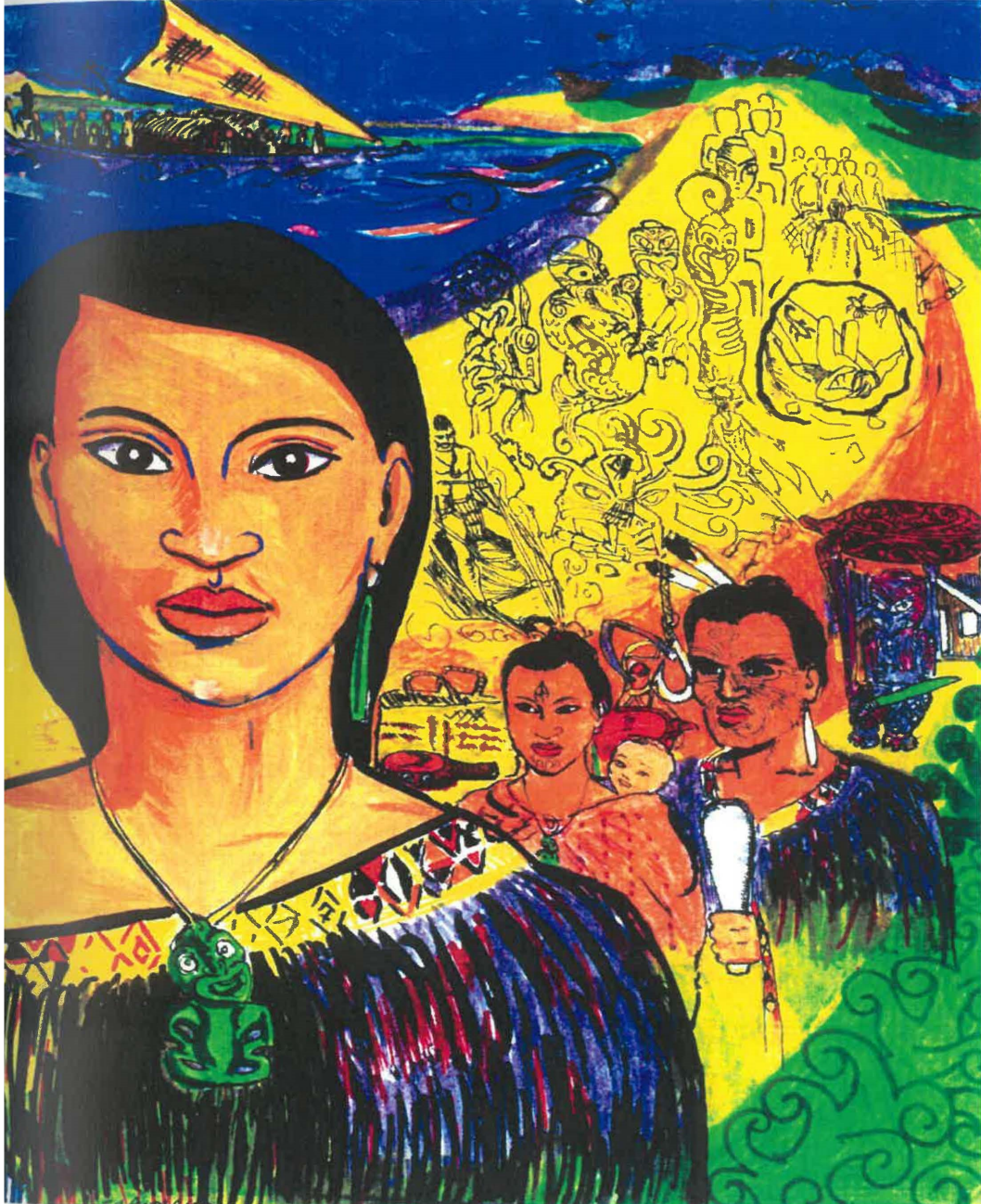




## Te Ao Tawhito

The following illustration attempts to encapsulate the meaning of Te Ao Tawhito, the world of our Māori ancestors, nga taonga tuku iho. Important, for example, is the fountain of knowledge available within an understanding of Māori cosmogony and mythology, the legends and folklore, the achievements and histories of whānau, hapu and iwi.

**Figure 6.19: Te Ao Tawhito by Beth Anderson**



Also acknowledged is the expertise and skill which is to be found within the realm of Māori cultural pursuits and traditional components of tikanga Māori – raranga, whakairo, tukutuku, kowhaiwhai, te reo Māori, the marae, the karanga,

whaikorero, ngā waiata, haka and moteatea, the hakari, the many ways in which Māori express mana moana, mana whenua and mana tangata. The girl in the foreground represents someone who benefits from the waiora of Te Ao Tawhito. She has an understanding of this realm and is able to participate in te ao Māori. She wears the korowai, ear pendant and hei-tiki which belonged to her tupuna. She is able to lead the whānau in powhiri and whakawhanaungatanga, she is a much valued source of knowledge, skill and expertise. She has confidence and ability. The yellow beam represents the waiora which this woman obtains from her experience of Te Ao Tawhito.

**Figure 6.20: Te Ao Tawhito by Tumohe Clarke**



The second illustration reminds us that whakapapa is the link to Te Ao Tawhito. This kuia and koro could belong to any one of us. Although the physical body has gone, their spirit will always lie within us. Whakapapa gives us the right to experience the waiora of Te Ao Tawhito.

### Te Ao Hou

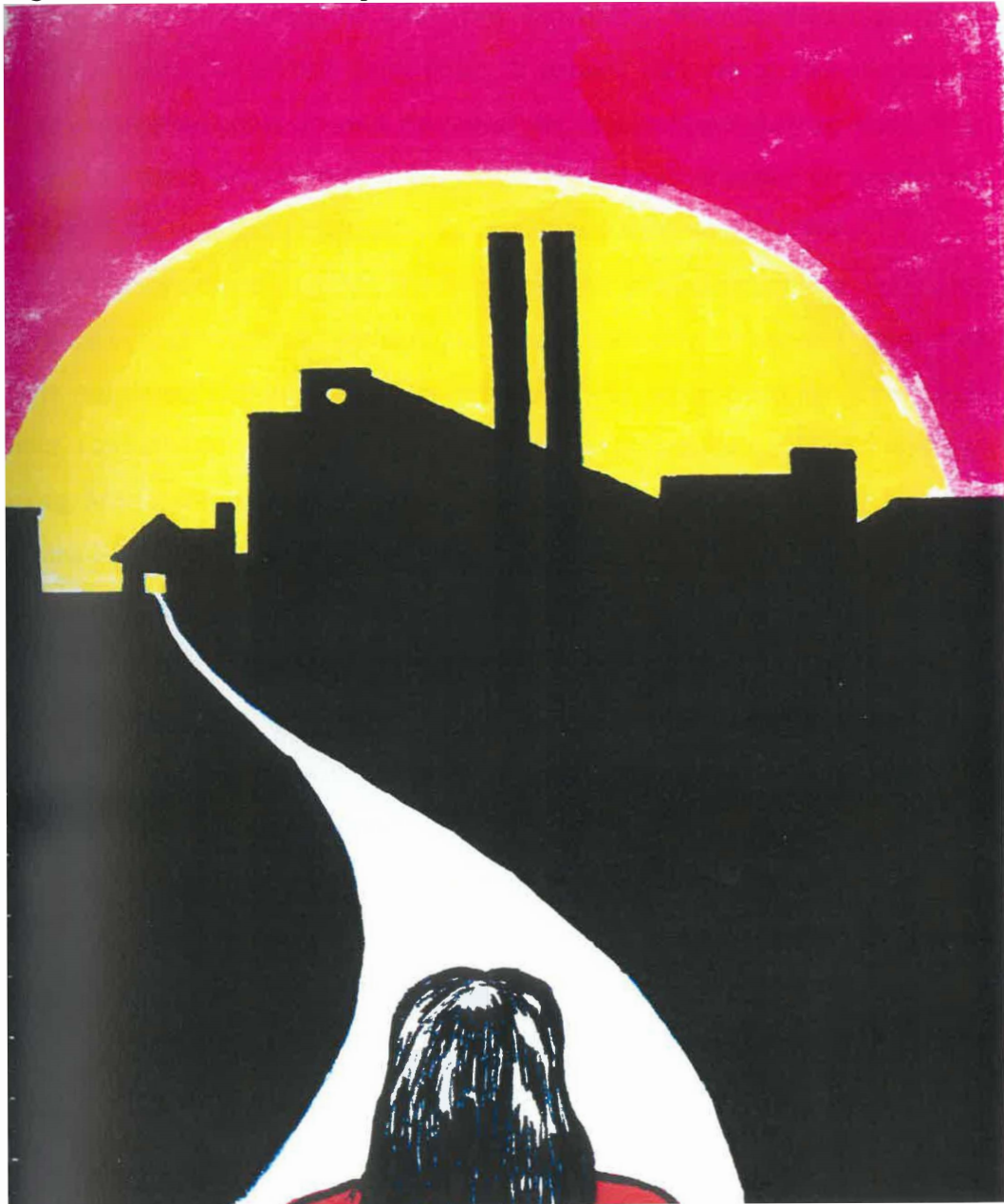
The final picture in this series depicts the realm of Te Ao Hou. This contrasts with Te Ao Tawhito, because it represents the world in which we live today. The magnificent full moon rising above the silhouette of city life suggests Te Ao Hou is a world of many opportunities. The red sky signifies hope, an age of awakening, an exciting promise of new beginnings. The pathway into Te Ao Hou



involves the ability to move quickly, embrace new ways of learning and forge new ideas for progress and development.

Te Ao Hou involves many things for many people. It offers the opportunity of education, employment, recreation, leisure, wealth, technology, travel, music, fashion and sophistication. One one hand, Te Ao Hou offers options, the opportunity to be ambitious and achieve objectives. On the other, however, it also involves experience of hardship, disadvantage, poverty, dependency, violence, aggression and crime. For many experience of Te Ao Hou is simply an experience of outright survival. We do the best that we can, the waiora of Te Ao Hou is found in our capacity to cope and realise our dreams.

**Figure 6.21: Te Ao Hou by Tumohe Clarke**



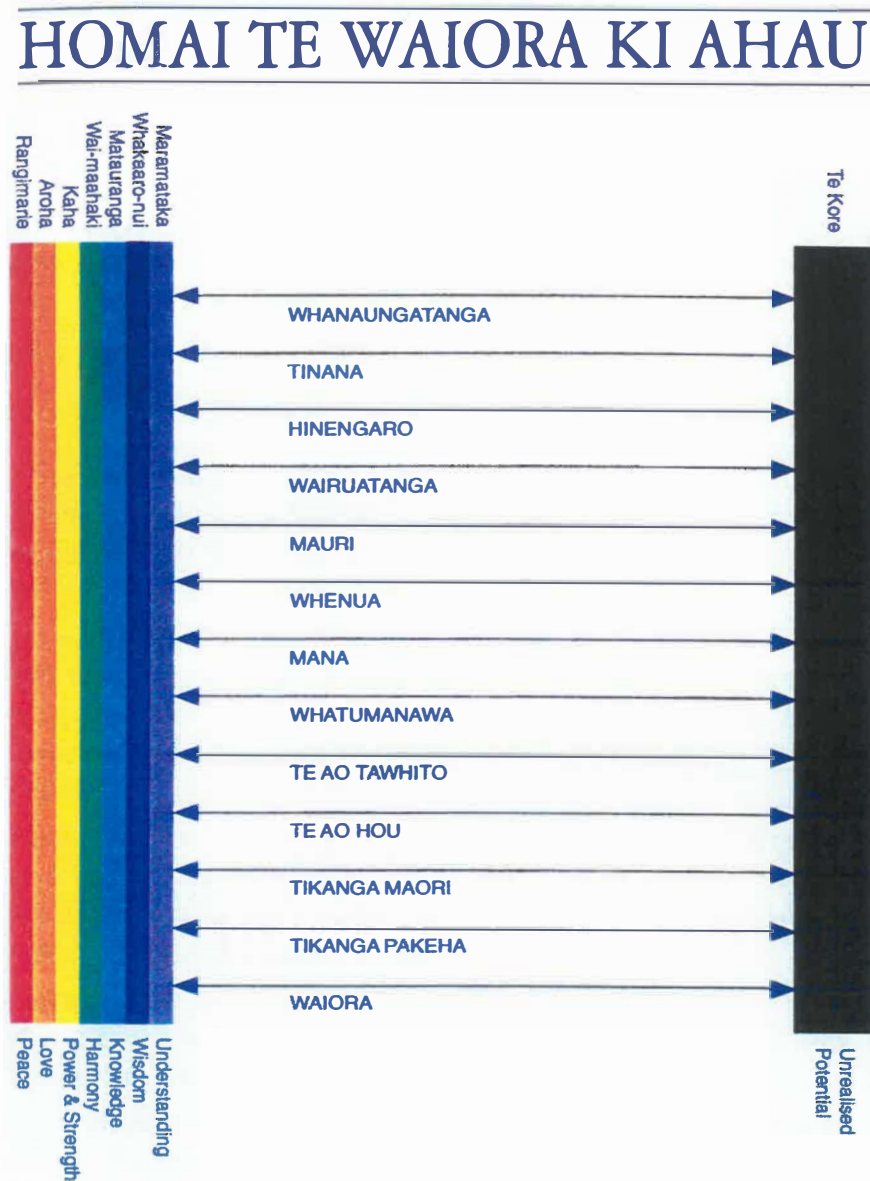
### ***The measurement tool***

The next main challenge was the need to develop an appropriate technique for the measurement and/or quantification of waiora. In this regard, two factors had an influence. Firstly, Rose Pere had drawn attention to the notion of total or complete waiora which seemed to suggest the existence of lesser states (1982, 1987 1991). Secondly, concepts portrayed within Māori cosmogony also supported the view that waiora may either be a total and complete experience or an incomplete experience, in which waiora had yet to be fully realised. This train of thought led to the idea that waiora could be conceptualised as a continuum between two poles. It seemed that one end of this continuum could be represented by the realm of complete and/or perfect waiora while the other could represent the realm of potential wellbeing, an incomplete experience wherein waiora had yet to be fully realised. To portray these poles, it seemed that colour and elements of Māori cosmogony could be used instead of the usual numerical rating scale. With this goal in mind, Bob Elliott's gallery of living colours provided an appropriate mechanism for visualising the realm of complete and total waiora (1988).

In many ancient cultures, the foundation for wellbeing has been built upon principles of understanding, wisdom, knowledge, harmony, power and peace. Bob Elliott suggested that each of these principles was represented by a particular colour. Collectively, this combination of colours presented the image of a rainbow. Among Māori, the rainbow is personified by Uenuku, Uenuku-rangi or Uenuku-tawhana-i-te-rangi. In Māori cosmogony, Uenuku is linked to protection, guardianship, a good and an untainted life, vitality and survival in the face of all odds. Among Māori, therefore, the concept of Uenuku quite clearly implies a sense of complete and utter wellbeing. Symbolically, it seemed Uenuku-rangi and the gallery of living colours provided a most appropriate medium to represent the realm of complete and total waiora

Māori cosmogony also provided a mechanism for conceptualising the other end of this bipolar continuum. Māori creation stories depict Te Kore as a realm of latent energy, a state of potential being and the point from which all things proceed. The concept of Te Kore is associated with night, the blackness before light and the darkness before potential has been realised. It seemed the Te Kore-Uenuku dichotomy could be transformed into a bi-polar continuum which would serve as a tool for the measurement of waiora.

**Figure 6.22: Homai te Waiora ki Ahau rating scale based on Te Kore-Uenuku dichotomy**



In accordance with such thoughts, Figure 6.22 displays the rating scale developed to measure the twelve components of *Hōmai te Waiora ki Ahau*.<sup>60</sup> Through the use of this technique, it was hoped respondents would be able to identify differences in the sense of waiora gained from experience of each component.

<sup>60</sup> The rating scale included a thirteenth component which allowed the measurement of self-rated waiora.



## The pilot study

Ten Māori women, aged 16-65 years took part in a preliminary pilot study of *Hōmai te Waiora ki Ahau*. The pilot study had two main aims, ie:

- to test the acceptability and construct validity of *Hōmai te Waiora ki Ahau* as a tool for measuring waiora in a group of Māori women; and
- to develop experience in the use of *Hōmai te Waiora ki Ahau* in preparation for its administration as a key instrument for PhD data collection.

Interviews took place in the participants own home. *Hōmai te Waiora ki Ahau* was presented in the following manner:

- The concept of waiora was discussed using the Te Kore-Uenuku dichotomy as an aid to explain the way in which experience of complete waiora may be contrasted against an experience which had yet to be fully realised;
- *Hōmai te Waiora ki Ahau* was presented with the explanation that this instrument aimed to measure the degree to which each component was a source of waiora in their lives at present. When participants felt ready to begin, discussion moved to the twelve respective components;
- Each component of the rating scale was displayed. The respective text and illustrations provided a visual aide and/or cue for discussion about the various ways in which these components may contribute to our feelings of waiora;
- Participants were asked to mark the Te Kore-Uenuku continuum at a place which they felt represented the extent to which this component was a source of waiora in their lives at present;
- And finally, participants were asked to provide a self-rating of their own waiora, or, their overall sense of wellbeing.

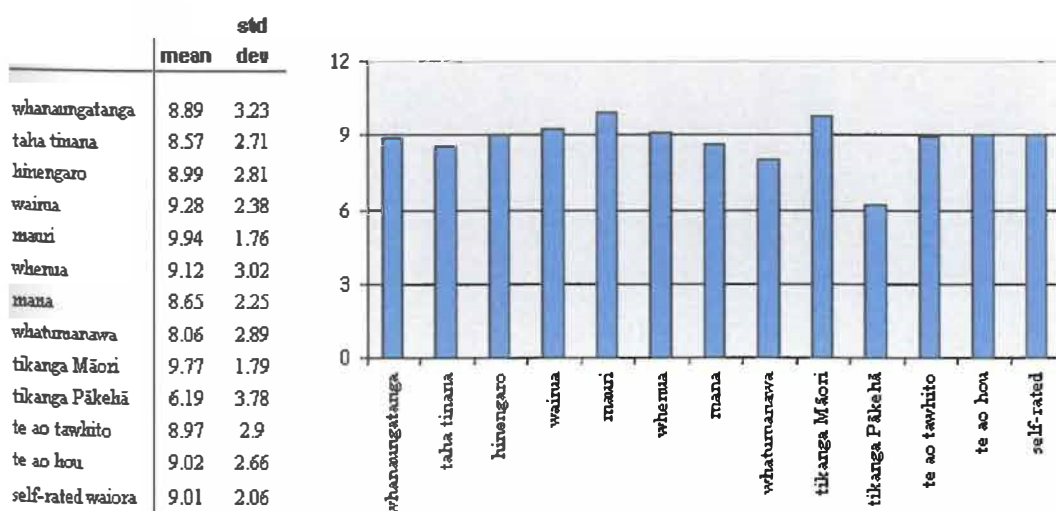
The interview took thirty to fifty minutes to complete. At the end, participants were given a copy of the *Hōmai te Waiora ki Ahau* as a koha for participation in the pilot study. The data was processed by simply measuring the distance between Te Kore and the marks placed by pilot study participants on each of the twelve component scales and single self-rating scale<sup>61</sup>. A *waiora* score was obtained by summing the twelve component ratings.

Individual responses to *Hōmai te Waiora ki Ahau* ranged from 0.5 to 12 and the component means ranged from 6.19 to 9.94. In general, this suggests participants were able to differentiate between each component as a potential

source of waiora and use the rating scale to identify differences in the degree of waiora obtained from each component. Respondents understood both the purpose of this tool and the technique for obtaining data. In its present form, therefore, this instrument was able to be implemented. Furthermore, the data gathered with this instrument provided a wealth of information about the waiora participants associated with each component.

Figure 6.23, presents the means and standard deviations for pilot study *Hōmai te Waiora ki Ahau* data. In respective order, it can be seen the standard deviations were greatest for tikanga Pākehā, whanaungatanga and whenua but lowest for tikanga Māori and mauri. As sources of waiora, therefore, it seems experience was most divergent for tikanga Pākehā, whanaungatanga and whenua among this group of women. And, at the other end of the scale, the waiora associated with tikanga Māori and mauri was most similar. In addition, the waiora gained from experience of tikanga Pākehā was significantly lower than that obtained from all other components except whatumanawa (t-tests at  $p>0.01$ ,  $p>0.05$  or  $p>0.10$ ). In stark contrast, tikanga Māori, along with mauri and wairua, were the strongest sources of waiora. It is interesting to note there was little difference between the means for te ao hou and te ao tawhito. As sources of waiora, these components seemed to almost identical. At 9.01, the mean for self-rated waiora clearly fell into the upper quartile which suggests participants felt an inherently strong sense of waiora.

**Figure 6.23: Hōmai te Waiora ki Ahau pilot study data by mean, standard deviation and plotted mean**



<sup>61</sup> The distance between Te Kore and Uenuku is 12mm.

There was a significant positive correlation was found between waiora scores and self-rated waiora ( $r = .91$ ,  $p > 0.01$ ). For each participant, therefore, the cumulative score of waiora components provided a good indication of how they themselves described their own sense of waiora. Indeed, eighty-two percent of the variance in this data was explained by the linear relationship between waiora scores and self-rated waiora. Such findings provide an element of confidence about the reliability of *Hōmai te Waiora ki Ahau*. The twelve component items also produced an alpha coefficient of .6929 which suggests an acceptable, but borderline, degree of reliability or internal consistency. In other words, each component did contribute to the overall score and the waiora score can be considered fairly representative of these twelve items. In principle, therefore, it would be acceptable to treat the waiora score as if it were a reliable independent variable<sup>62</sup>.

<sup>62</sup> Which, of course, would be a pre-requisite in any test which aimed to see whether waiora (as measured by this instrument) was a predictor of childbirth experience.

## **Chapter Seven**

### **Method**

#### *Te Huarahi*

The following chapter has two main aims. Firstly, the sections on ethical issues community orientation and recruitment strategies describe various methodologies implemented during the preparatory stages of this research. In addition, these sections highlight a number of obstacles which hindered progress during this period. And secondly, the sections on instrument development, data collection and data analysis aim to provide an understanding of the techniques and analytical frameworks used to collect data and examine the hypotheses under study.

#### **Ethical Issues**

Funding to cover the costs of this research was approved at the end of 1989. As is normally the case, access to this funding was conditional upon evidence of an iwi mandate (Appendix A) and ethics approval from the Waikato Area Health Board Ethics Committee (WAHBEC) as my research aimed to collect data from hospital medical files in this region<sup>63</sup>. WAHBEC initially granted approval in late 1990 (Appendix B) but negotiations continued until mid-1994. A number of issues hindered headway during this period. Furthermore various changes to the methodology were necessary to accommodate: the effects of health reforms on target recruitment facilities; the outcomes of community consultation processes and principles which seemed important to uphold in the implementation of a Māori-centred health research paradigm.

In the early nineties, hospital-based ethics committees made little distinction between experimental and observational research designs and differences in the protocols associated with respective methodologies were unclear (Faulder, 1985; Ministry of Justice 1993; Paul, 1989; Waikato Area Health Board, 1991). Little had been published on the implementation of Kaupapa Māori or Māori-centred

<sup>63</sup> The Waikato Area Health Board Ethics Committee was superseded by the Health Waikato Research and Ethics Committee when Regional Health Authorities were established in 1991.

health research methodologies and such methodologies had yet to establish credibility (Smith, 1992; Te Awekotuku, 1991). Amidst this environment, four main themes underpinned discussions with WAHBEC and the Health Waikato Research and Ethics Committee (HWREC).

### ***Communication Style***

In retrospect, it is clear that some of the proposed methodologies unwittingly challenged established perceptions about appropriate communication styles and advocacy procedures for health research participants. The WAHBEC had developed templates to assist preparation of consent forms and information sheets for proposed participants. In addition, they had established ties with an existing consumer advocacy group. For proposed participants in this study, however, the language in these templates seemed unnecessarily formal and the use of a non-Māori consumer advocate group seemed inappropriate. The ethics committee did not share such views but a compromise was eventually found (see recruitment package and consent forms in the appendices).

### ***Procedures for informed consent***

Issues associated with procedures for informed consent when attempting to recruit participants of Māori ethnicity were never resolved. On one side, it was argued that *kanohi-ki-te-kanohi* (face-to-face) was the most appropriate medium for relaying information to Māori about this particular project. Indeed, it seemed potential participants would not have the opportunity to make an informed decision about participation in this research unless such procedures took place. On the other side, the critical issue and stumbling block in negotiations with HWREC was whether access to potential participants' contact details, for this purpose, would constitute a breach of patient confidentiality.

A number of arguments supported access to potential participants' contact details for *kanohi-ki-te-kanohi* purposes in this instance. Within the 1993 Privacy Act, for example, at least four clauses gave ample provision for a researcher to be given *bona fide* access to patient contact details for the purposes of informed consent (Appendix C). In this regard, it was clear that the proposed research was observational with a retrospective component and would not, therefore, have a direct impact on patient treatment or care. Technically speaking, it was also reasonable to suggest the principal researcher had been temporarily employed by Health Waikato. Indeed, honorary staff status had been awarded for the duration

of the project (Appendix D) and Health Waikato had seconded a car to the project for recruitment purposes. In addition, the principal researcher could certainly be regarded a professional researcher with ethical obligations to a range of authorities including WAHBEC, the University of Waikato, the New Zealand Health Research Council and the Foundation for Research, Science and Technology and the Hauraki Māori Trust Board. Fourthly, the intention to use patient contact details for culturally appropriate informed consent procedures was fully supported by the chief obstetrician at Health Waikato, the District Manager of Thames Hospital and the Hauraki Māori Trust Board. In addition to meeting several criteria for access to patient contact details in the 1993 Privacy Act, it was clear that access to case-notes without patient consent in non-experimental, epidemiological studies was fairly common practice in particular circles both in New Zealand and overseas (Paul, 1989). Notwithstanding all of the above, HWREC felt that access to patient contact details, in this instance, would be unethical and illegal (Appendix C).

### ***Koha***

A cash koha to research participants had been approved by the funding agency, the Social Science Research Funds Committee (SSRFC), but the University of Waikato refused to administer this system unless recipients provided tax details and completed an Inland Revenue form<sup>64</sup>. Such a proposal seemed incongruous with the principle of koha. As an alternative, therefore, research participants were given a manaia, or bone-carving, which had been specifically designed to symbolize the significance of te whare tangata as a source of waiora for Māori. Participants also received a copy of the Māori wellbeing measure *Hōmai te Waiora ki Ahau*<sup>65</sup>. Unfortunately, HWREC found it difficult to accept the validity of koha as a methodology in Māori health research. In this particular instance, the gifting of these koha was deemed to be unethical and an incentive, or reward, for participation in this project (Appendix C).

### ***Midwife involvement***

In lieu of access to contact details for kanohi-ki-te-kanohi informed consent procedures, the ethics committee supported the implementation of a participant recruitment strategy which relied heavily on midwife co-operation. At an early stage, it became clear that the relationship between WAHBEC/HWREC

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<sup>64</sup> Within New Zealand, most research facilities now accept and acknowledge the validity of koha as Māori health research methodology, including the University of Waikato.

Committee and maternity staff at Thames Hospital was problematic. Midwives at the recruitment facility felt they had not been involved in the decision-making process which had granted ethics approval for this research. Although the District Manager of Thames Hospital as well as the Chief Obstetrician and the first of two Charge Nurses (Appendix D) clearly supported the proposed recruitment strategy, the midwives themselves were very reluctant to assist in any way and some even did their best to sabotage recruitment opportunities. Without success, the District Manager of Thames Hospital tried to create a co-operative atmosphere but the proposal that midwives assist the recruitment process was eventually abandoned.

### **Community Orientation**

Several techniques were employed to facilitate public awareness of this research and provide opportunities for Māori to participate in decision-making. The procedures for community orientation included iwi consultation, the distribution of promotional material and communications with health professionals.

#### ***Whānau, hapū and iwi consultation***

Multiple strategies were employed to ensure Māori within the study region were not only aware of this project but also able to contribute to discussions about research methodologies and objectives. More specifically, the principal researcher held four consultation hui, became involved in the establishment of three Māori health initiatives, produced three copies of a project pānui and helped deliver an antenatal class for adolescent Māori women. The first hui took place in early 1990 at the Hēni Ngaropi Marae in Harataunga, Coromandel. This gathering heralded the project's formal beginning. In Paeroa, during February 1991, the Whare Tangata hui was a large event which aimed to raise project awareness and provide an opportunity for community consultation as well as general discussion on reproductive health issues for Māori. One hundred and fifty people attended this four day hui during which seventeen speakers talked about the delivery of Māori reproductive health services and the need for new directions. The third hui took place in July 1991 at Wāhi Marae in Huntly. It provided an opportunity for discussion with Tainui's Iwi Health Forum which, at that time, comprised representatives from constituent districts of the Midland RHA. This forum,

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<sup>65</sup> The proposal to gift these particular koha was supported by the community and Te Roopu Hauora.

therefore, encompassed representatives from the target recruitment facilities. The final hui was at the Hauraki Māori Trust Board premises in Paeroa during 1992 with representatives from twelve Hauraki iwi.

In addition, networking and kanohi kitea opportunities evolved from a voluntary involvement in three Māori health initiatives: Te Rōpu Hauora (later known as Te Korowai o Hauraki), the Iwi Health Forum and Te Ahi Kaa Training & Social Services. In 1993, the principal researcher helped Te Rōpu Hauora develop and deliver an antenatal class for adolescent Māori mothers in Hauraki. A number of pānui outlining the research objectives and proposed methodologies were distributed to Marae, Kohanga Reo and Māori health initiatives in the target recruitment areas during 1990-1992 (Appendix E).

### ***Media Releases & Promotional Material***

Newspaper and radio helped to raise the profile of this research. In 1990 and 1994, Radio Aotearoa aired interviews which discussed the project's methodologies and long-term goals. In 1994, the Hauraki Herald published three articles to raise project awareness and two posters were disseminated within the community. The first A5 poster invited participation in the Whare Tangata hui. The second A4 poster went to potential recruitment facilities throughout Hauraki, namely the GP clinics, Māori health initiatives, Kohanga Reo, Marae, independent midwives and Thames Hospital Maternity Annex.

### ***Health professionals/maternity service providers***

The process of community orientation involved numerous communications, both face-to-face and by phone or letter, with various health professionals/maternity service providers associated with the target recruitment facilities, ie – the obstetricians, general practitioners, hospital and independent midwives, hospital managers and administration personnel. Such communications aimed to raise project awareness and ensure co-operation during participant recruitment and data-collection stages. Between 1991 and 1994, the principal researcher attended eleven meetings and gave three presentations on research goals and methodologies<sup>66</sup>. Numerous letters were also written including three circulars requesting GP and midwife co-operation to disseminate the participant recruitment package (Appendix F).

<sup>66</sup> In 1991, the research moved to Hauraki, rather than the wider Waikato region, but participant recruitment did not begin until 1994



## Participant Recruitment Criteria

It was initially proposed participants would comprise 150 self-identified Māori and 75 self-identified non-Māori women selected upon the following criteria:

- aged 16-34 years;
- primiparous;
- of similar socio-economic status; and
- have given birth in maternity facilities within the Midlands/Waikato region, ie - rural (Coromandel, Mangakino, Waihi); semi-rural facilities (Thames, Tokoroa, Huntly) or an urban facility (Waikato Womens) during the six month period September 1990 to February 1991.

For various reasons, all of these criteria changed. In particular, the Government's 1990 health reforms triggered a national-wide restructuring of maternity services which resulted in the closure or downsizing of target recruitment facilities in rural and semi-rural areas. Secondly, community consultation processes identified considerable support for a study which looked at the manner in which Māori childbirth experience may be influenced by maternal age, parity and socio-economic status. Thirdly, the intention to implement a cross-cultural methodology was heavily criticized by participants in the consultation hui who felt this project should concentrate on identifying the experiences of Māori women in the first instance. And finally, *manuhiri* status in most of the Waikato *rōhē* and the lack of effective support groups in these areas made it very difficult to recruit participants outside of Hauraki<sup>67</sup>.

By 1992, only two criteria governed the selection of women to participate in this project. Participants had to (i) be self-identified Māori and (ii) have given birth at Thames Maternity Annexe, a Level I, low risk facility in Hauraki.

However, the time-frame for recruitment eligibility changed five times. Table 7.1 outlines the proposed times and reasons for amendment. Such changes were primarily needed to accommodate delays in obtaining ethics approval and difficulties in the establishment of an effective recruitment strategy. In addition, one amendment was due to a change in target recruitment facilities from Waikato to Hauraki, an associated extension of the recruitment period from six months to

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<sup>67</sup> Māori health initiatives in the Midlands Regional Health Authority were largely in their infancy during this period and the people involved were not in a position to help recruitment. I am *tangata whenua* in Hauraki but a *manuhiri* (visitor) throughout the rest of Waikato.

one year and the addition of a retrospective medical file component. The retrospective component was included for two reasons. Firstly, it aimed to provide a database which would allow comparison of birth outcomes before and after maternity reforms introduced in the early nineties, namely the introduction of an independent midwife system. Although it did not eventuate, the retrospective component also aimed to provide an opportunity for inclusion of the twenty-four participants recruited during 1991<sup>68</sup>. In June 1993, all parties agreed that women who gave birth during the period mid-1992 to end-1993 were eligible for participation in the retrospective medical file analysis whereas those who were due to give birth during 1994 were eligible for recruitment in the prospective component.

**Table 7.1: Time-frames for recruitment eligibility, the five proposals and reasons for amendment**

when timeframe proposed	proposed timeframe for recruitment eligibility	obstacles encountered/ reasons for amendment
January 1990	September 1990 to February 1991	ethics approval obtained on 12 November 1991
November 1990	November 1990 to March 1991	recruitment difficulties due to the restructuring of maternity services, lack of support and manuhiri status
April 1991	1991	methodology changed to recruitment of participants from Hauraki only; Thames Hospital rejected 24 signed consent forms; methodology altered to include retrospective component; ethics approval had to be re-negotiated
March 1992	mid-1991 to mid-1992 (retrospective) and/or mid-1992 to mid-1993	ongoing negotiation with Health Waikato Ethics Committee over informed consent and data collection procedures; Thames Hospital administrative staff refuse to collaborate; ethics approval to continue did not come through until June 1993, and PhD suspension for maternity in place during March-August 1993
June 1993	mid-1992 to end-1993 (retrospective) and/or 1994 (prospective)	midwives refuse to assist procedures; recruitment abandoned in June 1994.

## Identification of Potential Participants

Four modifications to the methodology for identifying potential participants were introduced. The reasons for these changes are explained below:

### ***Phase1: Community networks***

It was initially proposed potential participants would be identified through community links, whanāu networks and word-of-mouth contact within the various Kohanga Reo, Marae and Māori health initiatives operating in each of the study regions. By April 1991, it was clear this approach would be too slow and

<sup>68</sup> All twenty-four women gave birth before issues associated with their participation in this

unrealistic given the time-frame for recruitment, the obstacles of manuhiri status and inadequate finance to cover the full costs of travel<sup>69</sup>. Moreover, the Acting District Manager of Thames Hospital refused to accept twenty-four participant consent forms recruited in this manner because, in her opinion, the recruitment method was invalid and unprofessional. Such factors triggered the need to re-negotiate the procedure for identification and recruitment of potential participants.

### ***Phase 2: Hospital records and administration procedures***

In July 1993 Health Waikato Ethics Committee approved the use of hospital resources to assist access to potential participants for this study. By September 1993 the Thames Hospital District Manager, Maternity Annex Charge Nurse and I had reached agreement on the general process through which this would be achieved (Appendix D). In terms of the retrospective component, the method for identifying potential participants was relatively straightforward, ie:

- Thames Hospital scanned their data-base to identify all Māori women who had given birth during the period mid-1992 to end-1993;
- the District Manager sent this group of potential participants a letter which explained the study and requested consent for the principal researcher to either make contact, or, have access to their birth record/medical file (Appendix G);
- completed consent forms were returned to the District Manager's Executive Secretary who forwarded them to me so that I could proceed accordingly.

With regard to the identification of wāhine hapū, or potential participants for the prospective ante/postnatal interviews, the procedure for making contact was as follows:

- hospital midwives, independent midwives and general practitioners were asked to distribute a recruitment package to potential participants during the booking-in process for delivery at Thames maternity annex. This package contained a consent form for the principle researcher to make direct contact (Appendix H);
- completed consent forms were returned in the self-addressed envelope, or, via the booking-in facility in order that the principal researcher could then make contact to discuss the project and, if appropriate, gain consent for participation;

project had been resolved and they were not, therefore, interviewed while hapū.

<sup>69</sup> A member of Tainui's Ariki-nui had recommended the process of community orientation should include participation in the Poukai (Dame Te Atārangikahu's annual visit to each of the twenty-three Tainui marae). This, it was argued, would help overcome a common perception of researchers seeking Māori participants, "he kotuku rerenga tahi", ie – that the researcher is a white heron or a stranger who is only seen once.

- three seminars and a number of circulars were produced to facilitate rapport with service providers directly involved in the recruitment process (Appendix F)<sup>70</sup>.

These procedures were implemented in early January 1994. By mid-February it was clear that progress was slow and considerably hampered by midwife reluctance to assist recruitment. Indeed, it came to light that some midwives had actually spoken against participation in this research. This position raised several concerns. Foremost was the problem that access to information about this project could only be obtained if potential participants took the time to read the recruitment material. Irrespective of midwife opposition, written mediums were known to be ineffective as a technique for initiating contact with Māori<sup>71</sup>.

### ***Phase 3: Kanohi-ki-te-kanohi***

In an attempt to alleviate at least some of the Phase 2 obstacles, it was decided to follow up the letter inviting participation in the retrospective component with a personal visit to potential participants. In addition, contact details for several wāhine hapū were provided by the hospital for the same purpose. This approach was supported by the Thames Hospital District Manager, the Chief Obstetrician and the Hauraki Māori Trust Board. This recruitment strategy was employed during the four month period, February to May 1994. It simply aimed to facilitate procedures for informed consent by giving potential participants and their whānau the opportunity to meet the principal researcher in order to discuss the project face-to-face. Unfortunately, contact depended upon potential participants being at home when the visit took place<sup>72</sup>. In some instances, two or three attempts to meet potential participant were made. At the end of the day, however, this strategy turned out to be a highly successful recruitment technique (explained below).

### ***Phase 4: Community networks***

In June 1994, the kanohi-ki-te-kanohi recruitment strategy was abandoned because HWREC felt the use of contact details for this purpose constituted a breach of patient confidentiality (Appendix C). For the remaining six months of

<sup>70</sup> Given their role in the recruitment process, midwives and general practitioners were the initial interface between myself, as principal researcher, and potential participants.

<sup>71</sup> Smith (1992, 1996, 1999) has documented the importance of appropriate Māori research methodologies including kanohi kitea (face-to-face interaction) and the principle of ako Māori (culturally preferred pedagogy).

1994 the recruitment of participants for this project relied solely on community networks and word-of-mouth.

### **Efficacy of Recruitment Strategies**

In total, one hundred and sixteen self-identified Māori women agreed to take part in this project. Of these women, twenty-four, became ineligible to participate because they gave birth during 1991. The final group of participants, therefore, comprised ninety-two Māori women who birthed at Thames Hospital during the period mid-1992 to end-1994. Sixty participants gave consent for retrospective medical file analysis and thirty-two wāhine hapū agreed to participate in the prospective component. Ten wāhine hapū were among those who gave consent for retrospective medical file analysis. One participant was dropped from the study because she left town before the antenatal interview had been completed.

Several years after completion of the recruitment and data-collection phases, it was decided that analysis of the retrospective component would not be included in this thesis because it was not directly relevant to the hypotheses under study. Nevertheless, it is of value to think about the effectiveness of each recruitment strategy in terms of its' ability to secure participants for both retrospective and prospective components of the study.

1. **Community networks:** Twenty-three pilot-study participants and twenty-four wāhine hapū were identified through community networks during Phase 1 of the recruitment period<sup>72</sup>. In addition, twelve wāhine hapū were identified through community networks during Phase 3. As a tool for identifying potential participants for prospective study this method was thirteen percent effective<sup>74</sup>.
2. **Letter from the hospital inviting participation:** The hospital received sixteen responses to one-hundred and thirty-six letters inviting participation in the retrospective component of this study. Of these responses, ten women had given consent to access their medical records and six agreed to be contacted. Once contact had been made, all six agreed to participate. As a strategy for identifying potential participants, this method was one hundred percent effective. As a recruitment technique, however, this approach was only seven percent effective.

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<sup>72</sup> Contact details held by Thames Hospital did not include a phone number for the vast majority of women.

<sup>73</sup> None of the twenty-four project participants recruited during Phase 1 took part in the study for reasons explained elsewhere.

<sup>74</sup> Ninety-four Māori women gave birth at Thames Hospital during 1994. This group, therefore, comprised the total pool of potential candidates for participation in the prospective component.

3. **Recruitment package:** None of the general practitioners responded to the letter requesting assistance to distribute the recruitment package and none of the recruitment packages given to potential participants came from GPs<sup>75</sup>. According to the record kept by Thames Hospital's administrative staff, midwives offered twenty-four recruitment packages to potential participants<sup>76</sup>. Eighteen of these women refused to take the package. Of the six who did not refuse, three agreed to further contact at which point they agreed to participate and three did not respond. As a technique for identifying potential participants this method had the capacity to be one hundred percent effective. In this instance, however, midwives offered the recruitment package to a quarter of the total pool of participants eligible for study. As a recruitment strategy, this method was three percent effective.
4. **Kanohi-ki-te-kanohi:** Forty-six of the one hundred and eleven women who did not respond to the hospital's letter inviting participation in the retrospective study were contacted during the implementation of this phase<sup>77</sup>. Forty-four in this group agreed to participate in the project<sup>78</sup>. Ten of these forty-four women were hapū again and eligible for participation in the prospective study. All ten agreed to participate in this component<sup>79</sup>. In addition, contact details for ten wāhine hapū were obtained from their hospital records during the implementation of this phase. Upon contact, all ten agreed to participate in the project. Altogether, fifty-four of the fifty-six women approached during implementation of the kanohi-ki-te-kanohi phase agreed to participate in this project. Ten, in this group, took part in both retrospective and prospective components. As a recruitment technique, this strategy was ninety-six percent effective.

In summary, sixty of the one hundred and thirty-six women eligible for participation in the retrospective component were successfully recruited. This constituted, forty-four percent of the potential participant pool. Of these sixty women, seventeen percent were recruited via the hospital's letter inviting participation and eighty-three percent were recruited kanohi-ki-te-kanohi. In addition, thirty-two of the ninety-four women eligible for participation in the prospective component were invited to take part in this study. This represented thirty-four percent of the potential participant pool. All of these women agreed to

<sup>75</sup> This may have been because independent midwives were more likely to book women in for delivery.

<sup>76</sup> Midwives refused to keep records on the number of packages distributed.

<sup>77</sup> Nine of the one hundred and thirty-six letters sent out were returned because the address was no longer correct.

<sup>78</sup> One of the two women who refused did so because her maternity file had already been the subject-matter of disciplinary procedures. The other refused because her partner did not want to be involved.

participate and all were recruited during the six month period January to June 1994 through the use of kanohi-ki-te-kanohi recruitment techniques.

### **Instrument Development**

Ten instruments were used to gather data for this research. These instruments aimed to examine psychological variables associated with the quality of childbirth experience and facilitate the collection of medical file data. The research instruments are described under four main headings: waiora, psychological wellbeing, ethnic identity and quality of childbirth experience. Thirteen wāhine hapū took part two small pilot-tests which looked at different techniques for presenting questions and collecting data during 1990 and 1991. These pilot-tests excluded the two wellbeing measures and the instrument for collection of medical file data. Participants, in this process, disliked the use of a tape-recorder and preferred open-ended questions or rating scales.

### **Waiora**

The previous chapter has fully explained the development of *Hōmai te Waiora ki Ahau* as an instrument for the measurement of waiora. Briefly, therefore, the tool is made up of twelve components comprising whanaungatanga, tinana, hinengaro, wairuatanga, mauri, whenua, mana, whatumanawa, tikanga Māori, tikanga Pākehā, te ao tawhito and te ao hou.

Ten women took part in a preliminary pilot study of *Hōmai te Waiora ki Ahau*. The outcomes of this pilot study suggested the measure had content validity as responses ranged within and across categories. Both parametric and non-parametric correlations between waiora scores and self-rated waiora were significant at the 0.01 level (Pearson's  $r = .906$  and Spearman's  $\rho = .924$ ). This suggested the aggregate score was a good predictor of subjective waiora as indicated by the single self-rated measure. The pilot-study data suggested the waiora measure, in its' current form, was reasonably valid and reliable. More specifically, Chronbach's alpha coefficient for the twelve waiora components was  $\alpha_{12} = .6929$  which is acceptable for a pilot-study (Hills, 2000). Statistically, such outcomes suggested it was acceptable to proceed to a larger study.

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<sup>79</sup> Of these ten women, seven had previously refused the recruitment package because of derogatory comments about the project from hospital midwives. The remaining three had taken the package but not responded to the request for permission to make contact.

## psychological Wellbeing

The ten item inventory, Affectometer 2, was used to measure psychological wellbeing. This measure has been shown to have an alpha co-efficient of .95 with a high level of test-retest validity (Kamman & Flett, 1983). Affectometer 2 was included in this study for three reasons. Firstly, it provided a means to demonstrate that *Hōmai te Waiora ki Ahau* was not simply measuring the same phenomenon as other measures of psychological wellbeing. In this way, therefore, Affectometer 2 was helping to test the validity of *Hōmai te Waiora ki Ahau* as a particularly Māori measure of wellbeing. In addition, it was of interest to consider whether waiora would be a predictor of Affectometer 2, or vice-versa, as both measures were tapping the construct of psychological wellbeing. Towards this end, the pilot-study data had shown no evidence of a significant relationship between these variables. And thirdly, it was of interest to consider the extent to which Affectometer 2 may, in itself, be a predictor of childbirth outcomes. As predictors of Māori childbirth experience, therefore, this methodology aimed to compare the outcomes of *Hōmai te Waiora ki Ahau* against those for Affectometer 2.

## Ethnic Identity

The ethnic identity measure contained six independent items. The format for presenting this measure had been tested in the above pilot-studies which showed that respondents were able and willing to answer these questions. Participants were asked:

1. whether they viewed themselves as Pākehā, part Māori, mostly Māori or Māori;
2. to rate the importance of Māoritanga;
3. whether they would attend wānanga mo ngā wāhine hapū;
4. to identify their iwi;
5. whether they wanted to keep the whenua, and
6. to identify with one, or more, statements which described active or passive stages of cultural identity development.

In general, this measure aimed to test whether feelings of ethnic identity influenced the way in which participants responded to *Hōmai te Waiora ki Ahau*. In addition, however, the relationship between ethnic identity and the quality of childbirth experience was also examined.



### ***Quality of childbirth experience***

Seven instruments were used to examine the quality of childbirth experience among participants in this study. Four instruments measured prenatal social support, obstetric care, cognitive processes and coping strategies and three instruments were used to examine social support during childbirth, birth outcomes and maternal postpartum perceptions. Each instrument comprised several components:

#### **Prenatal social support**

This instrument collected data on the quantity, source and type of social support resources during pregnancy. A number of open-ended general questions were asked and a series of five-point rating scales were used to examine how much attention, information, tikanga, taha tinana, korero, awhi and tautoko participants received from a range of sources, namely, the general practitioner, midwife, obstetrician, whānau, whanaunga and/or whanaunganui.

#### **Prenatal obstetric care**

This instrument contained a number of open-ended questions which considered the way in which participants became aware of pregnancy and their utilisation of prenatal obstetric care services. Some of this information was found in participants' medical files.

#### **Prenatal cognitive processes**

This instrument involved four separate measures which mostly used five-point rating scales to examine feelings of trust, control and confidence as well as provide information on a range of childbirth expectations.

#### **Prenatal strategies for coping**

Open-ended questions and five-point rating scales were used to examine the development of behavioural and/or cognitive coping strategies.

#### **Social support during childbirth**

This instrument provided several opportunities for participants' to talk openly about their experience of social support during labour and delivery. Medical files contained information on the number of maternity professionals and whānau members present.

#### **Childbirth outcomes**

This instrument provided a template for the collection of medical file data, such as, length of labour, use of obstetric technology in labour, gestation at

delivery, infant birthweight, one and five minute apgar scores and maternal feeding techniques.

### Postpartum perceptions

A series of open-ended questions and five-point rating scales were used to gather information on maternal perceptions regarding the quality of labour and delivery experience, satisfaction with the care during childbirth and feelings of postpartum wellbeing.

## Data Collection Procedures

Formal agreement to take part in this project was evident upon signing the consent form for participation (interviewees only) and/or the consent form for access to medical records. The consent forms were placed on the hospital file and a hei-tiki sticker was attached to the file cover. Interview and data collection procedures comprised three separate components - an antenatal interview, a postnatal interview and medical file analysis. The interviews took place in each participant's home and the medical file analysis took place at a desk in the Maternity Ward at Thames Hospital.

### **Antenatal Interview**

The antenatal interview (Appendix I) involved administration of *Hōmai te Waiora ki Ahau*, the ethnic identity measure, Affectometer 2 and the instruments for measuring prenatal social support, prenatal obstetric care, prenatal cognitive processes and prenatal strategies for coping. *Hōmai te Waiora ki Ahau* was generally presented during the latter part of the antenatal interview but, in some instances, another visit was arranged for this purpose<sup>80</sup>. In general, participants read the antenatal questionnaire themselves and responded to each question in turn. Similarly, participants mostly preferred to rate the waiora scale themselves. In most cases, my role was to clarify any issues and present the waiora measure. In some cases, participants wanted to have the questions read out and their responses recorded by the researcher. On average, the antenatal interview took ninety minutes although times ranged between one and two hours. *Hōmai te Waiora ki Ahau* took roughly thirty to forty minutes to administer. At the end of this interview, participants were given a koha to signify the importance of wāhine hapū as a source of waiora for te iwi Māori.

<sup>80</sup> The manner in which *Hōmai te Waiora ki Ahau* is presented has been described in Chapter 6.

### ***Postnatal interview***

Administrative staff at the maternity annexe agreed to notify the principal researcher when a participant in this study gave birth. In general, however, this procedure was not necessary as the information was relayed through informal sources or through their presence in the annexe. The postnatal questionnaire was administered during the first two weeks postpartum and lasted around twenty minutes Appendix J<sup>81</sup>. In contrast to the prenatal interview, none of the participants wanted to read the questionnaire themselves. In all cases, therefore, the researcher read the questions and recorded responses. At the end of the interview, participants were reminded that the final phase of this project involved the collection of medical file data. Some participants wanted their case notes. In order to do this, they had to request access to their medical file in writing but they were able to appoint an agent to act on their behalf, if desired. In all cases, the principal researcher acted as the agent and took responsibility to ensure participants received a copy of their case-notes.

### ***Medical File Analysis***

The process for collecting medical file data was the same for retrospective and prospective components (Appendix K)<sup>82</sup>. The signed consent form was given to a file clerk who would then hand over the relevant records. The file was not allowed to leave the hospital's premises and the data contained within each file was manually recorded. A desk in the maternity annexe was allocated for this purpose. Each file took up to two hours to process depending on the complexity of complications and obstetric interventions.

### ***Data Analysis***

There were four stages of data analysis.

#### ***Stage One***

This stage involved entering the raw data onto spreadsheets in Microsoft '97 Excel format, sorting the data into groups and the calculation of scores. There were aggregate scores for waiora, Affectometer 2, social support and obstetric technology. The Oakley & Rajan (1990) model was used to calculate obstetric

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<sup>81</sup> Question 11 was abandoned because most participants did not want to answer it.

<sup>82</sup> The decision to withhold the retrospective component of this study was not made until analysis of these files was almost complete.

technology scores<sup>83</sup>. All other variables yielded between two and thirteen single-index scores which generally comprised the raw data itself, that is: the actual rating, weeks gestation, number of consultations, length of labour and/or birthweight. Yes/no responses were coded to give a score.

Three variables were grouped to assess the adequacy of prenatal obstetric care, namely: the gestation at which care commenced, the number of consultations and infant gestation at book-in for delivery.

In addition, the data on parity, experience of complications in a previous pregnancy and/or satisfaction with the care was grouped in order to examine their relationship with the development of prenatal cognitive processes. This data came from medical files and/or self-report.

## Stage Two

This stage involved the use of SPSS 10.0 for Windows and Microsoft Excel '98 software to look at the frequencies, distribution and dispersion of scores.

## Stage Three

Stage Three of data analysis was primarily concerned with the reliability of *Hōmai te Waiora ki Ahau*, as a tool for measuring waiora. The SPSS 10.0 package was used to screen the normality of data and calculate item-total statistics, a one-way Analysis of Variance, Hotelling's T-squared and Chronbach's reliability coefficient.

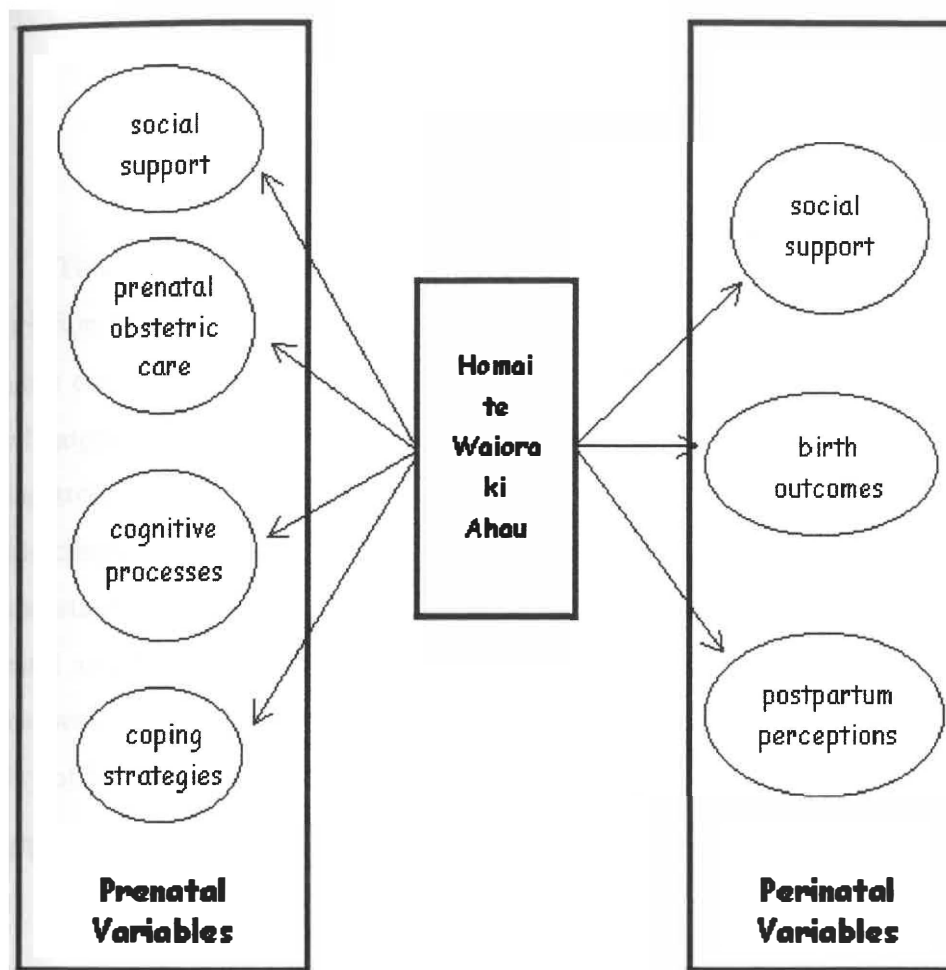
## Stage Four

The final stage of data analysis involved the use of SPSS 10.0 software to test the main hypotheses and research questions under study. More specifically, this stage tested the significance of parametric and non-parametric correlations between waiora and the quality of childbirth indicators, ie: prenatal social support, cognitive processes, coping strategies as well as postnatal social support, birth outcomes and postpartum perceptions. Figure 7.1 presents a schematic illustration of the main hypothesis and the variables against which waiora was correlated<sup>84</sup>. Relationships between and within waiora, ethnic identity, Affectometer 2 and the prenatal/perinatal quality of childbirth variables were also examined.

<sup>83</sup> Based on the use of induction, pain-relief and delivery techniques in labour. Each intervention is weighted to give an overall score.

<sup>84</sup> Some of the variables contain single indicators as well as composite measures.

**Figure 7.1: Schematic illustration of the main research hypothesis, is waiora able to predict the quality of childbirth variables**



# Chapter Eight

## Ngā Huanga

### *Results*

This chapter is presented in three parts. Part one provides a general description of the variables in this study. These have been grouped under the nine variable categories, ie: waiora, ethnic identity, psychological wellbeing, prenatal social support, prenatal obstetric care, prenatal cognitive mediators, prenatal coping strategies, perinatal outcomes and postpartum perceptions. The second part of this chapter examines the reliability of *Hōmai te Waiora ki Ahau* as a tool for the measurement of waiora. And the final section explores the correlations between prenatal and perinatal variables in this study. This section looks at the extent to which waiora and/or the other variables under study were able to predict the quality of Māori childbirth experience.

**Figure 8.1: Maternal age-group by proportion in each category**

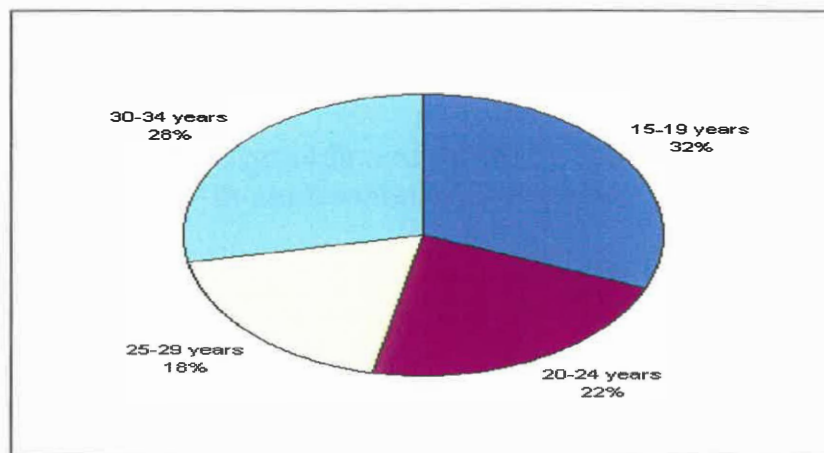
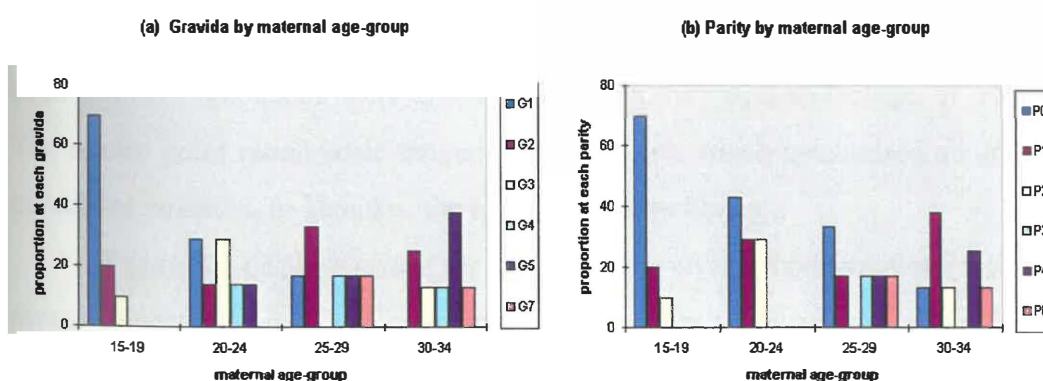


Figure 8.1 displays the age-groups of women who took part in this study. Maternal age ranged from sixteen to thirty-four years. A third of all participants were in their teenage years and eight were thirty years or older. Forty-two percent were in their twenties with the majority in this group being twenty-five years or less. Such findings contrast with age-specific fertility patterns evident for the Māori population, nationally, at this time. In 1994, Māori women aged twenty to twenty-four and twenty-five to twenty-nine, respectively, contributed the greatest

proportion of Māori births, nationally. Among women in this sample, however, teenagers provided the greatest proportion of births. In comparison with other regions, teenagers and women aged thirty years or more contributed a greater proportion of Māori births in Hauraki.

A third of the women in this study were in their first pregnancy, a fifth were pregnant for the second time and almost half had experienced three or more previous pregnancies. Thirteen participants, had never given birth whereas eight women had experienced one birth and ten had birthed on two or more previous occasions. Figure 8.2 presents participant gravida and parity by maternal age-group. Seventy percent of the teenage participants were primigravidae but thirty percent had one or two previous livebirths. Among women aged twenty to twenty-four years, thirty percent were primigravidae, fourteen percent were pregnant for the second time and almost sixty percent were in their third, fourth or fifth pregnancy. Fifty-eight percent of those at this maternal age-group had experienced a previous birth but only two women had given birth more than once. A third of the participants aged twenty-five to twenty-nine years were pregnant for the second time and two women were in their fifth to seventh pregnancies. None of the women aged thirty years or more were primigravidae but one had never given birth before and three had birthed four to six times previously. Such findings may be explained by abortion, miscarriage and/or ectopic pregnancy.

**Figure 8.2: Participant gravida and parity by the proportion of women in each maternal age-group**



In addition to the high proportion of teenage mothers and the number of women who already had two or more children at home, other indicators of exposure to stress among participants were evident. Although thirteen participants did not work during pregnancy, seventeen were involved in various activities

including attendance at school. Five women stayed in full-time employment till the third trimester and one woman worked two jobs right up to delivery. Nevertheless, the vast majority of participants were clearly among those who experience the most severe forms of socio-economic disadvantage in this country. Even though only two women said they did not have a partner during pregnancy, almost ninety percent were beneficiaries. This suggests the partners were mostly unemployed and unable to provide financial security. With regard to future opportunities, ninety percent of the women in this study had neither a tertiary education nor any particular work skills. More than half of all participants lived with extended family members and seventy-one percent shared their living arrangements with children<sup>85</sup>. In addition, fifty-eight percent of the women in this study had never taken any form of contraception and at least sixty-seven percent of the women in this study smoked during pregnancy<sup>86</sup>. The majority of smokers had more than twenty cigarettes per day<sup>87</sup>.

### **General description of the research variables**

This section aims to describe the data obtained for each of the main variables under study, that is – waiora, ethnic identity, psychological wellbeing, prenatal social support, prenatal obstetric care, prenatal cognitive mediators, prenatal coping strategies and perinatal outcomes.

#### **Waiora**

Each of the components in *Hōmai te Waiora ki Ahau* aimed to depict a potential source of waiora or wellbeing for Māori people<sup>88</sup>. Participants were asked to rate the degree to which they currently experienced the waiora available from each source. Participants were also asked to rate their overall feelings of waiora. The twelve point rating scale ranged from Te Kore, which symbolised an area of unrealised potential, to Uenuku, the realm of total wellbeing.

Figure 8.3 displays means for each of the twelve component along with the means self-rated waiora and component scores overall. In general, mean scores ranged from five to ten and the mean of self-rated waiora at 8.22 suggests participants mostly felt good about themselves. Little difference is evident between

<sup>85</sup> Thirteen women did not have children but only nine did not live with children

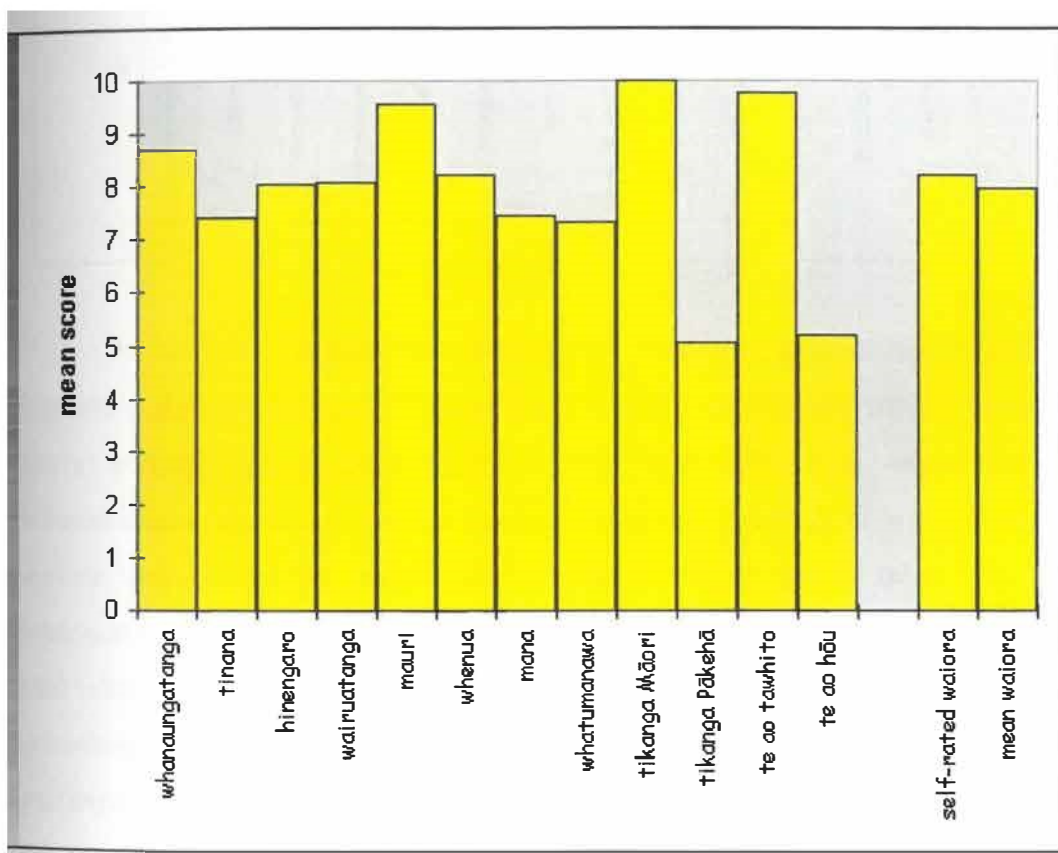
<sup>86</sup> Both smoking during pregnancy and the non-use of contraception have been associated with lifestyles of stress and disadvantage (Sceats 1988; Oakley 1992 and Pool et al 1999)

<sup>87</sup> Ten percent of the medical files did not contain information on maternal smoking.



the means for self-rated waiora and component scores overall. Within component scores, tikanga Pākehā and te ao hōu yielded the lowest means whereas the direct opposite was true for tikanga Māori and te ao tawhito. In respective order, mean scores for mauri, whānaungatanga, wairuatanga and whenua were also relatively high. Lower mean scores were evident for whatumanawa, taha tinana, mana and hinengaro. Standard deviations for mean component scores ranged from 2.39 for to 4.07 being lowest for te ao tawhito and greatest for whenua. Such findings suggest the waiora gained from te ao tawhito was most similar and experience of whenua differed most.

**Figure 8.3: Mean values for *Hōmai te Waiora ki Ahau* components, self-rated waiora & component scores overall**

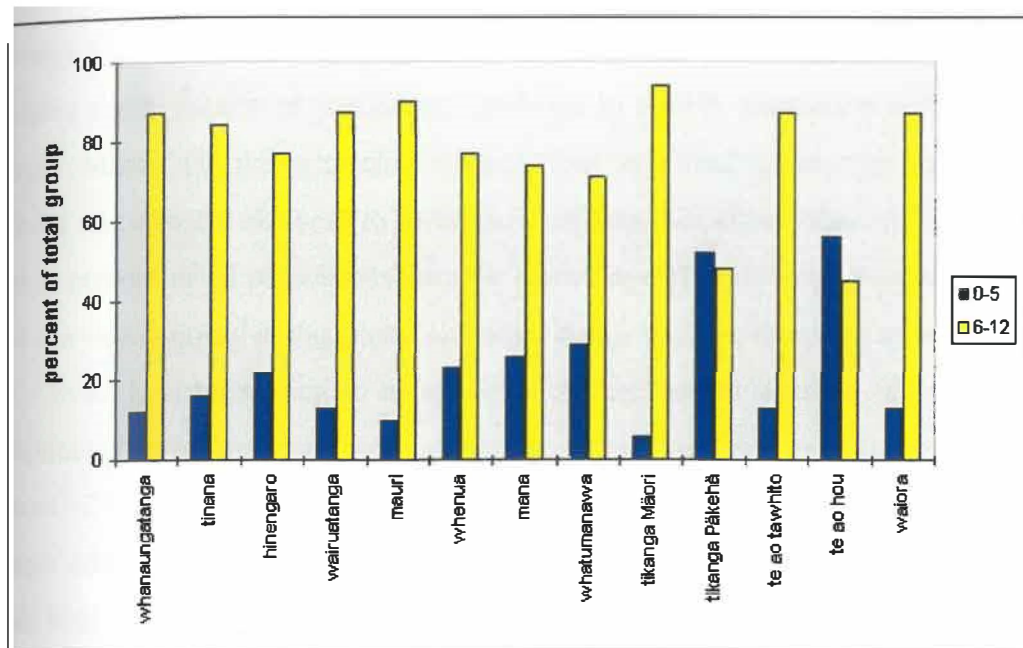


To further examine the distribution of data, Figure 8.4 displays participant ratings for *Hōmai te Waiora ki Ahau* items by upper and lower values as a proportion of the total group. In all cases, except te ao hōu and tikanga Pākehā, the vast majority of participants gave each component a rating of six or more. Of those in this latter group, more than eighty percent rated wairua, mauri and tikanga

<sup>88</sup> *Hōmai te Waiora ki Ahau* comprised thirteen items, ie - twelve components plus one measure of self-rated waiora.

Māori in the top quartile, at nine or more, and sixty percent placed hinengaro, wairua, mana and whatumanawa in this category.

**Figure 8.4: Participant ratings for *Hōmai te Waiora ki Ahau* items by upper and lower values as a proportion of the total group**



Such findings suggest most participants considered these components to be important sources of waiora. However, not everyone felt this way. Twenty to thirty percent of the participants in this study felt their experience of whatumanawa, mana, whenua and hinengaro provided relatively little in the way of waiora and two-to-five women gave tikanga Māori, mauri, te ao tawhito, whānaungatanga, wairua and taha tinana a rating of five or less. Several women said whānaungatanga, hinengaro, whenua, mana, whatumanawa and tikanga Māori contributed nothing to their feelings of waiora. In contrast, the majority of participants felt their experiences of te ao hou and tikanga Pākehā provided little in the way of waiora and two thirds, in this group, rated these components in the lowest quartile. Three women felt the waiora of tikanga Pākehā was, as yet, an area of unrealised potential. Although roughly forty-five percent of the participants in this study felt the waiora gained from te ao hōu and tikanga Pākehā was above average, very few rated these components in the top quartile. Tikanga Pākehā and taha tinana were the only components in *Hōmai te Waiora ki Ahau* that did not receive a rating above eleven. With regard to self-rated waiora, almost ninety percent of the participants in this study said their feelings were above average and

three-fifths, in this group, were in the top quartile. Four women gave self-ratings which ranged between two and five.

### Ethnic Identity

Table 8.1 displays the indicators used to measure an affinity for Māori identity by the number and proportion of participants in each group. All in all, roughly eighty percent of participants preferred to identify themselves as Māori or mostly Māori. Of the remaining women, four preferred to identify as mostly Pākehā and two did not wish to particularly affiliate with either ethnicity. Around eighty percent of all participants also felt knowledge of Māoritanga was important and the vast majority in this group said Māoritanga was a most important aspect of their lives. It is interesting to note five of the six women who did not consider Māoritanga to be important were among those who identified as Māori or mostly Māori. Conversely, five of the six women who did not think of themselves as Māori said knowledge of Māoritanga was an important or most important part of their lives.

**Table 8.1: Indicators of Māori identity by number of participants and proportion of total group**

indicators of Māori identity	number	proportion
identified as Māori or mostly Māori	25	81
felt Māoritanga was important	25	81
affiliate with active stage of identity development	29	94
would attend wānanga	23	74
able to identify iwi	11	35
want whenua	16	52

Such findings suggest participants' perceptions about their own ethnicity may have been based on the degree of Māori blood rather than their life experience or the extent to which they wished to affiliate with things Māori. However, when prompted to affiliate with an active or passive stage of cultural identity, twenty-nine of the thirty-one women in this study indicated categories which represented dissatisfaction with the status quo and/or desire for change. The vast majority also said they would attend wānanga mo ngā wāhine hapū if such a service was available and three women thought they would probably participate in wānanga. Despite considerable desire for Māori knowledge and overwhelming support for

the importance of Māoritanga almost two-thirds of the participants in this study were unable to identify their iwi and only half wanted their whenua to be taken away from the hospital.

### Psychological Wellbeing

Three indicators of psychological wellbeing were included in this study. Firstly, participants were asked to complete the shortened version of Affectometer 2. This ten item scale contained five positive and five negative affect variables. Respondents were asked to indicate how often each affect had influenced their lives over the past few weeks, ie - not at all, occasionally, sometimes, often or all the time. Each response category was weighted from 0 (not at all) to 4 (all the time) and an overall score was derived by subtracting the sum of negative items from the sum of positive items. Mean scores can, therefore, be located along a continuum which ranges from  $-2$  at the negative extreme to  $+2$  at the other. Wellbeing is indicated by a positive score, or when good feelings predominate over bad. For any given sample, the authors suggest the distribution of Affectometer scores will tend towards a normal shape clustered around the midpoint zero but slightly skewed towards the positive end of the scale (Kammann & Flett, 1983). Secondly, participants were asked to self-rate their feelings of wellbeing on a five-point scale which ranged from bad to excellent. And thirdly, participants were also asked to identify the best and worst aspects of their pregnancy.

**Figure 8.5: Affectometer 2 scores as a proportion of the total group**

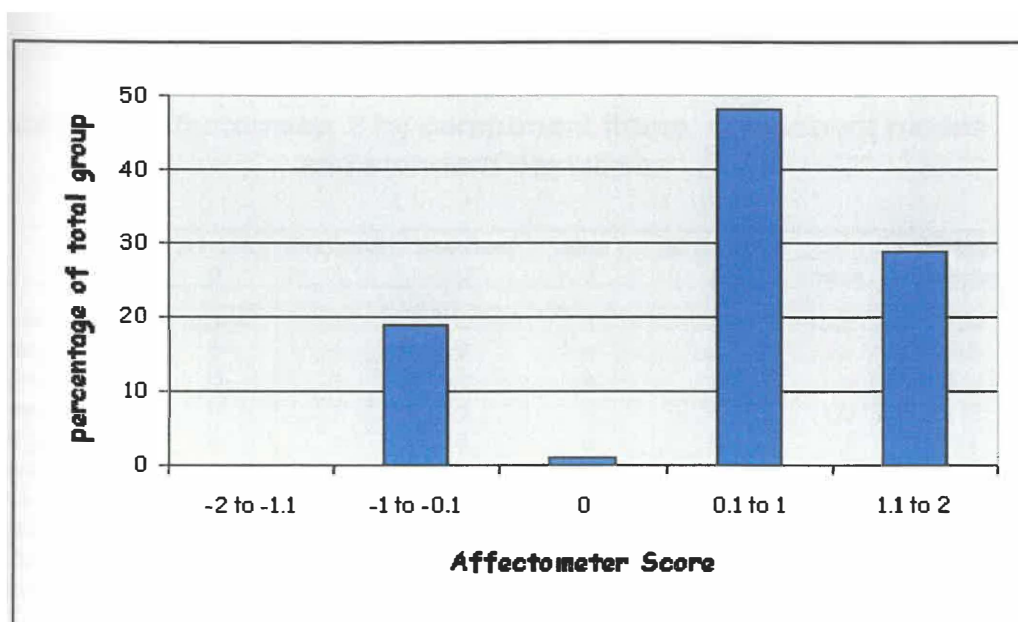


Figure 8.5 presents Affectometer 2 scores as a proportion of the total group. As expected, the distribution of scores was normal but skewed towards the positive end of the scale which suggests the measure was valid for this group of women (Kamman & Flett, 1983). Roughly twenty percent of participants produced a negative score and, thus, displayed below average levels of wellbeing. Nobody, however had a score in the lowest possible category. Although one woman scored zero, the majority yielded positive Affectometer scores. Indeed, almost half of all participants scored between zero and one while thirty percent displayed levels in the most positive category. Such findings suggest feelings of wellbeing among women in this study may have been higher than those found elsewhere (Kamman & Flett, 1983). Furthermore, sixty-seven percent self-rated their own wellbeing as good or excellent and the remainder said their sense of personal wellbeing was OK. No-one said they had a bad or poor sense of overall wellbeing.

The frequency of ratings for each Affectometer 2 item suggests participants were more likely to experience positive, than negative, emotions. Table 8.2 displays the number of participants in each rating category alongwith the component means and standard deviations. In general, the majority of women felt optimistic, good natured, confident and useful either often, or, all the time over the last few weeks and a third were largely satisfied with their lives. Sixty to eighty percent also said they seldom, or, never experienced feelings of helplessness, depression, discontent, hopelessness and withdrawal. Only two women indicated they never, or, seldom felt confident and two others said they experienced feelings of hopelessness often, or, all the time.

**Table 8.2: Affectometer 2 by component items, component means and standard deviations**

	not at all 0	occasionally 1	sometimes 2	often 3	all the time 5	mean	standard deviation
satisfied	4	7	10	3	7	2.06	1.34
optimistic	0	9	6	4	12	2.6	1.28
helpless	12	7	7	4	1	1.19	1.19
depressed	9	9	5	6	2	1.45	1.28
good natured	6	4	6	9	6	2.16	1.4
discontented	11	7	5	4	4	1.45	1.4
hopeless	20	6	3	1	1	0.6	1.02
confident	0	2	8	6	15	3.09	1.01
useful	2	4	11	6	8	2.45	1.2
withdrawn	14	7	5	1	4	1.16	1.39

When asked to describe what they liked best about being hapū, ninety percent of the women in this study mentioned the awe and excitement of creating new life and feeling the mauri, or, life force of a baby within their womb. Twenty-two percent also expressed the pleasure gained from feeling looked after, pampered and closer to the whānau. In contrast, when participants were asked to identify the worst thing about being pregnant, eighty-four percent mentioned physical and/or behavioural symptoms such as morning sickness, backpains, tiredness the ability to do less and feeling large or cumbersome. Three women said fear of complications and/or experience of complications was the worst aspect of their pregnancy and four didn't like the way pregnancy made them feel stressed out, extra sensitive, moody or aggressive.

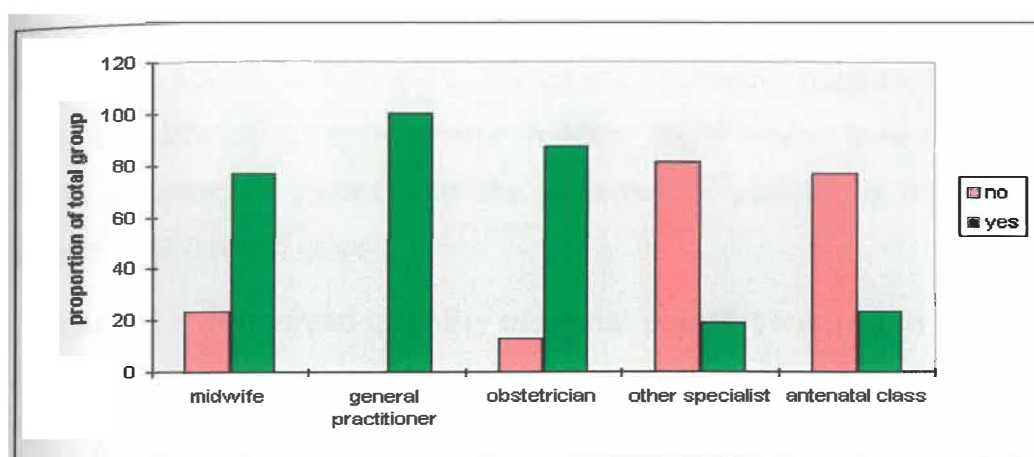
### Prenatal Social Support

Just two women said they did not have a partner during pregnancy but one woman's partner was in prison and another said she was "sort-of" partnered. With regard to the provision of instrumental support during pregnancy, however, five women said they did not have any help at all and two felt they only received a little help in the last few weeks. Of the twenty-four women who did have help - five said their *tane* was the sole provider and six had one family member and/or children as the main providers. Thirteen women received help from three or more of the extended whānau during pregnancy including one woman who also had help from friends. In addition to whānau and friends, health professionals may also be a source of emotional, tangible and instrumental support resources during pregnancy.

Figure 8.6 displays the proportion of participants seen by maternity service providers and/or other health professionals during pregnancy. Every participant saw a general practitioner at some stage during pregnancy. Furthermore, just over three quarters saw an independent midwife as well as an obstetrician. One fifth also received care from another health professional, such as a dietician or specialist. In contrast, less than a quarter of the women in this study attended an antenatal class. Eighty percent received care from at least three maternity service providers during pregnancy and almost a third had more than five professionals involved with their case. Thirty percent of all participants received care from more than one general practitioner and half of those who received midwife care saw two or three different

midwives during their pregnancy. Almost forty percent of the participants seen by an obstetrician during pregnancy received care from more than one obstetrician.

**Figure 8.6: Proportion of participants seen by maternity service providers and/or other health professionals during pregnancy**



Participants were asked to rate various resources in terms of how much they received from the range of potential sources, ie: the general practitioner, other maternity service providers/experts (midwives or obstetricians), antenatal class, whānau, whānaunga and whānaunganui<sup>89</sup>. Seven types of resources were measured, ie: attention, information, taha tinana, korero, tikanga, awhi and tautoko<sup>90</sup>.

**Table 8.3: Social support as the sum of participant ratings for each source and type of resource received during pregnancy**

	general practitioner	other experts	antenatal class	whānau	whānaunga	whānaunganui	total
attention	85	67	22	116	85	94	469
information	73	69	27	97	82	90	438
tinana	56	50	23	103	61	66	359
korero	52	48	16	111	84	84	395
tautoko	39	49	16	116	74	86	380
awhi	46	37	14	117	89	90	393
tikanga	55	49	24	103	71	78	380
total	406	369	142	763	546	588	2814

Table 8.3 presents participants ratings for each source by the type of resource received during pregnancy. In relative terms, whānau outstripped all other

<sup>89</sup> The term whānau refers to immediate family such as mother, father, grandparents, brothers, sisters, partner and his parents); whānaunganui refers to extended family such as cousins, other relations and close friends and whānaunganui refers to distant relations, friends or acquaintances.



sources as a provider of social support. Furthermore, participants whānaunganui and whānaunga provided more resources than the professional sources. Among professional sources, general practitioners provided more support than midwives or obstetricians. Antenatal classes provided the least of all sources. With regard to the quantity of resources, participants mostly received attention followed by information, korero, awhi, tautoko, tikanga and taha tinana, respectively. A more detailed understanding of the manner in which social support was experienced during pregnancy is gained from the frequency of participants ratings as a proportion of the total group.

**Figure 8:7: Perceived quantity of social support from each source**

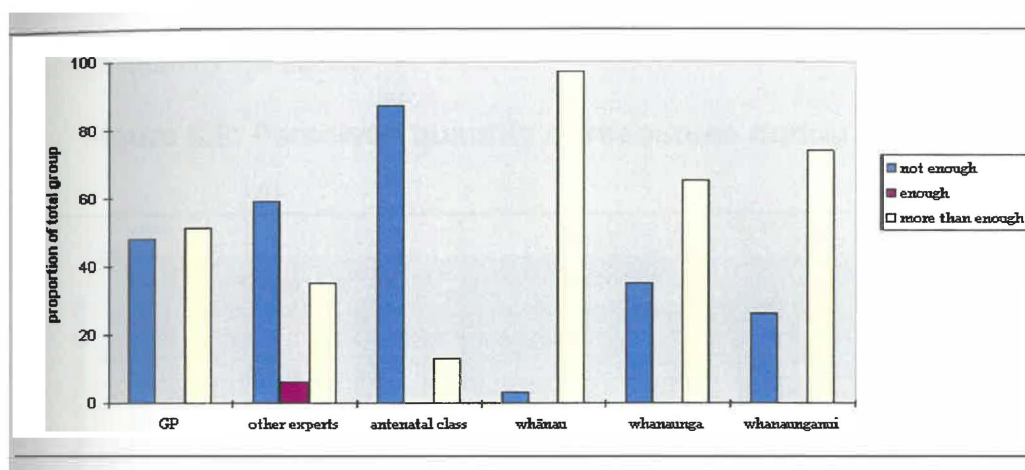


Figure 8.7 summarizes perceptions on the quantity of social support provided by each source. Once again, greater support was associated with whānau sources. In general, participants were more likely to say professionals did not provide enough resources whereas whānau mostly provided more than enough. Within professional sources, the general practitioner provided the most resources and just over half of all participants received more than enough resources from this source. Fifty-nine percent of the women in this study said other experts did not provide enough resources. Although antenatal classes rated worst as a source of social support, only seven participants actually attended classes and four of these women said more than enough resources were provided. In contrast, ninety-seven percent of all participants felt the whānau provided more than enough social support during pregnancy. It is interesting to note whānaunganui provided more

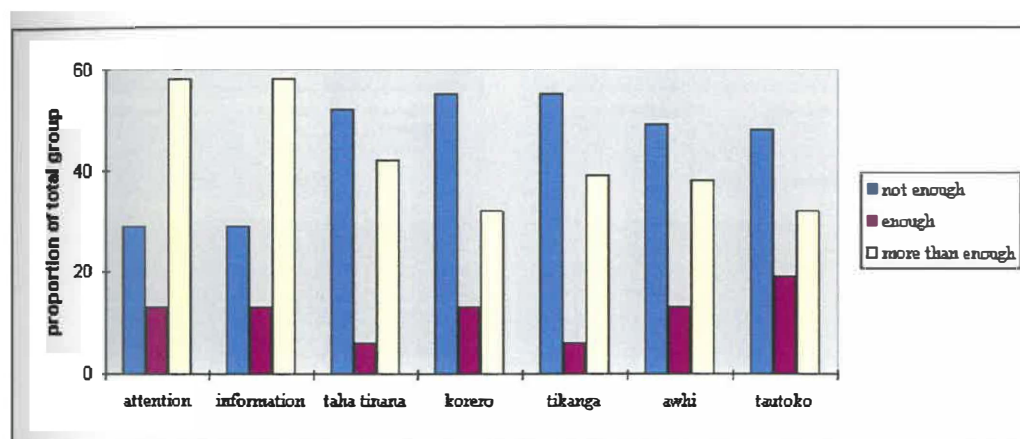
<sup>90</sup> The term taha tinana refers to physical, bodily attention; korero refers to general discussion; tautoko refers to support in any way; awhi describes love and care; tikanga refers to advice or guidance.



resources than whānaunga but the majority of participants felt both sources gave more than enough social support during pregnancy.

Figure 8.8 displays participants perceptions on the quantity of resources received during pregnancy as a proportion of the total group. In general, participants received more than enough attention and information but not enough taha tinana, korero, tikanga, awhi and tautoko. Almost sixty percent of the participants in this study received more than enough attention and information but a third did not have enough of these resources during pregnancy. On one hand, approximately half of all participants did not receive enough taha tinana, korero, tautoko, awhi or tikanga. On the other hand, however, roughly forty percent received more than enough taha tinana, tikanga and awhi and a third had more than enough tautoko and korero.

**Figure 8.8: Perceived quantity of resources during pregnancy**



Figures 8.9 to 8.11 allow the types of resources provided by general practitioners, other experts and the whānau to be compared.

Figure 8.9, for example, presents participants perceptions on the quantity of resources provided by general practitioners as a proportion of the total group. Half of the women in this study felt general practitioners provided more than enough social support overall. When the quantity of each resource is considered, however, the majority felt general practitioners provided enough or more than enough attention, information and tikanga but not enough taha tinana, korero, awhi and tautoko.

**Figure 8.9: Quantity of resources provided by general practitioners during pregnancy as a proportion of the total group**

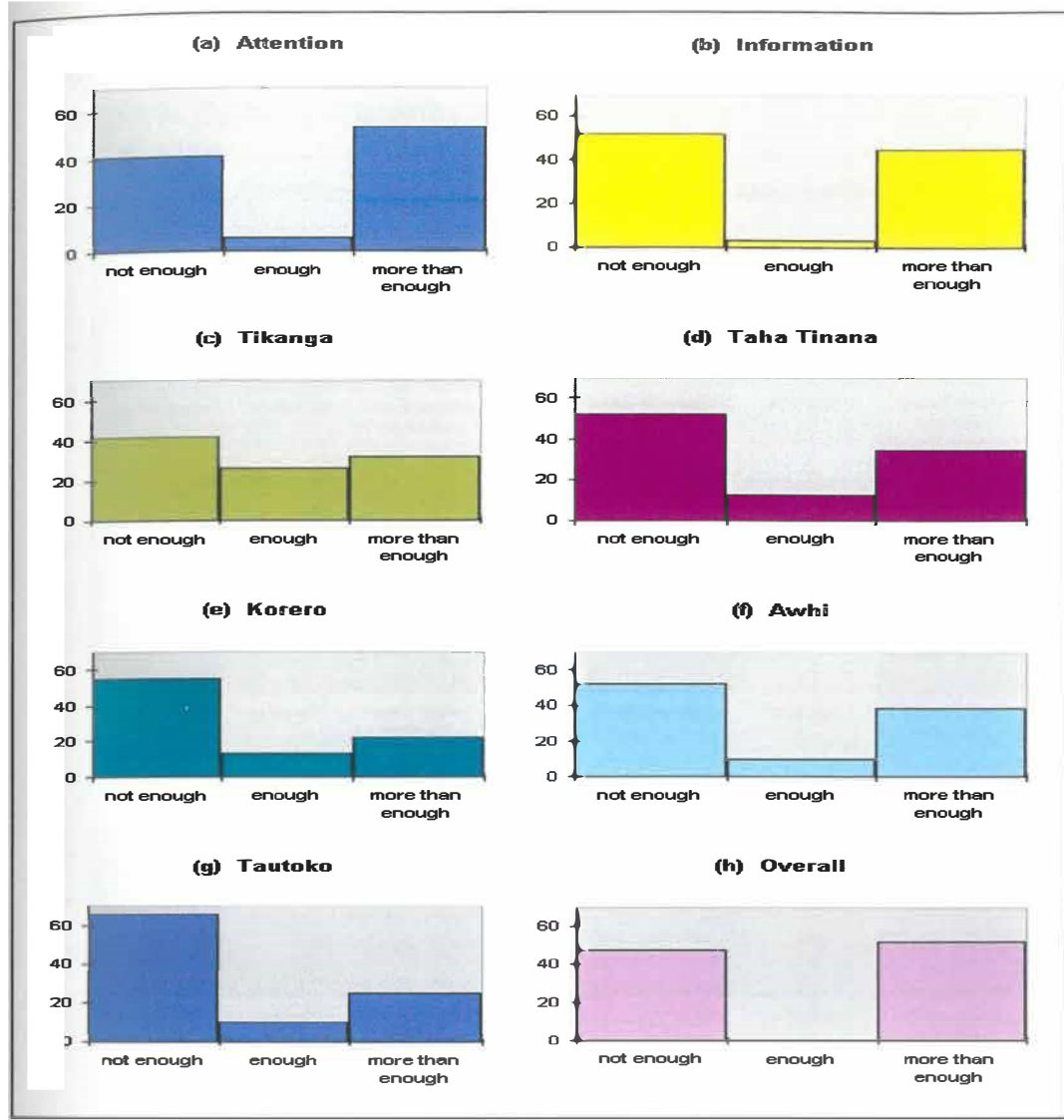
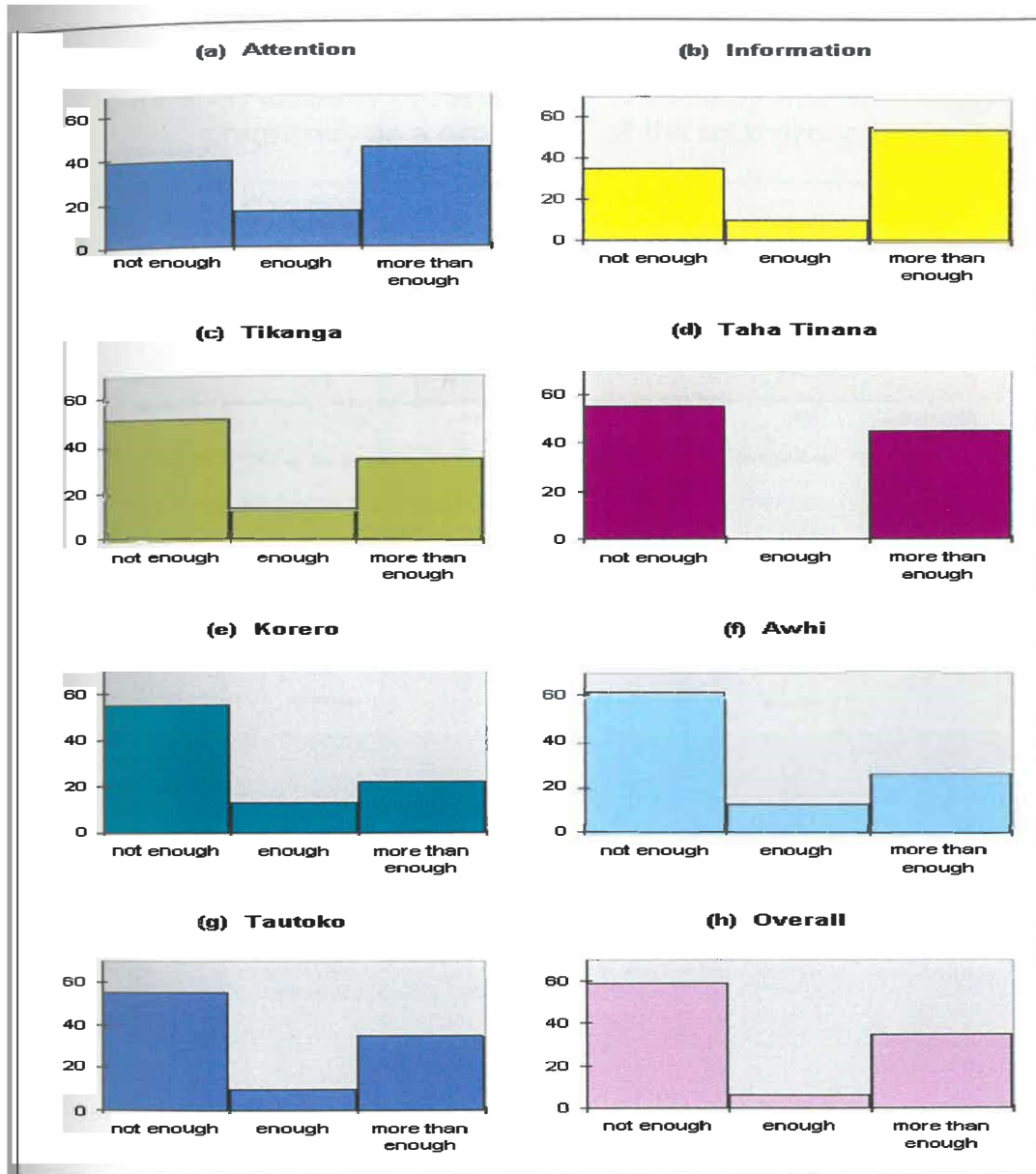


Figure 8.10 displays participant perceptions on the quantity of resources provided by other maternity service providers, that is the obstetricians and midwives, as a proportion of the total group. In general, the majority of participants felt other experts did not provide enough social support during pregnancy. However, most felt other experts provided more than enough attention and information but not enough taha tinana, korero, awhi, tikanga and support. In comparison with general practitioners, other experts provided more support but less attention, korero, awhi and tikanga. Only seven participants went to antenatal classes but their ratings suggest antenatal classes may have been a better source of support resources than general practitioners or the other experts. All seven, for example, felt that antenatal classes provided enough or more than enough

information and the majority felt this source provided enough or more than enough attention, taha tinana, tikanga, support and korero.

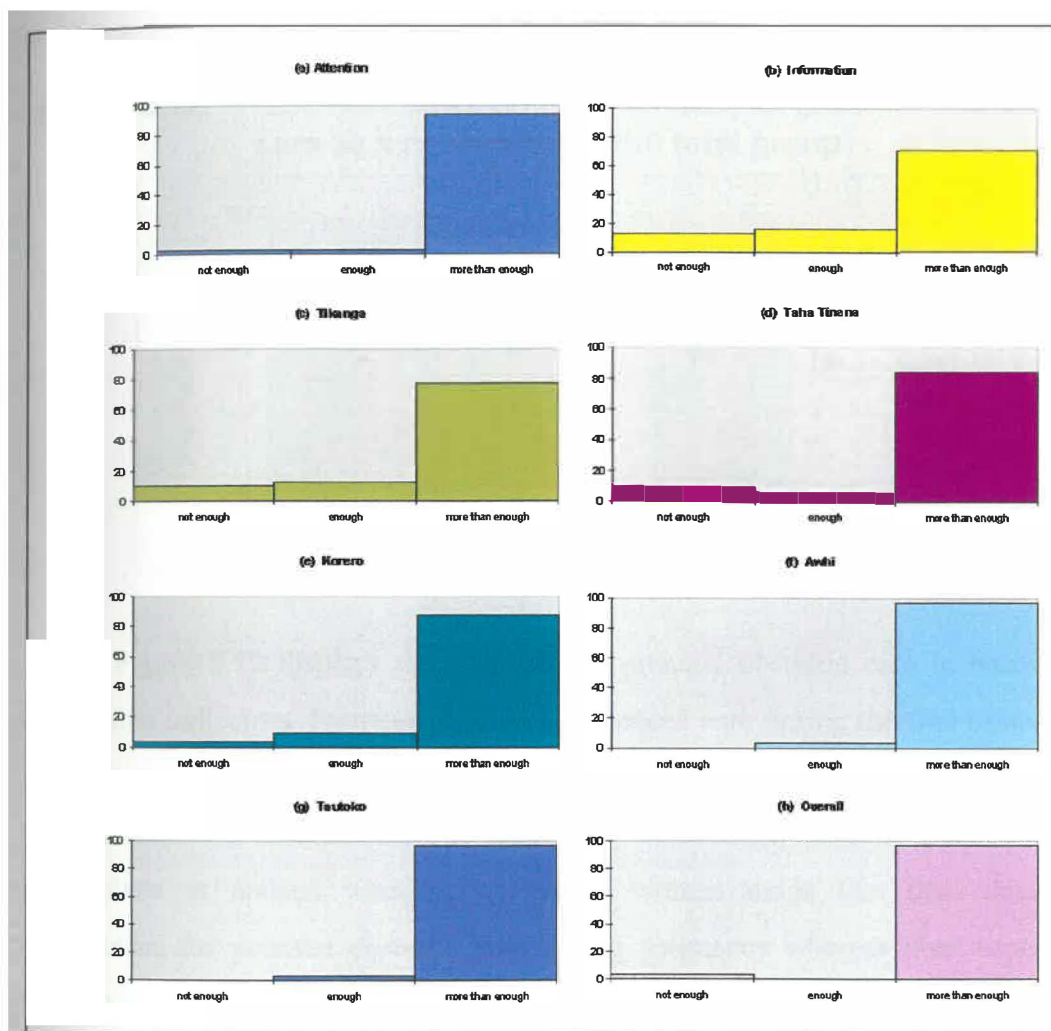
**Figure 8.10: Perceived quantity of resources provided by other experts during pregnancy as a proportion of the total group**



Participants' perceptions on the quantity of resources provided by whānau during pregnancy are displayed in Figure 8.11. Without exception, the vast majority felt the whānau provided more than enough of all resources. Even the seven women who did not receive help from anyone during pregnancy said the whānau provided more than enough social support. At worst, three or four participants said the whānau did not provide enough information, taha tinana and tikanga. The majority also felt whānaunga and whānaunganui provided more than

enough of all resources during pregnancy although these sources did not provide as much support as whānau. Roughly three-quarters of all participants felt whānaunganui provided enough or more than enough attention, information, korero, tikanga, awhi and tautoko. In all respects, except taha tinana, whānaunganui provided more resources than whānaunga.

**Figure 8.11: Quantity of resources provided by whānau during pregnancy as a proportion of the total group**



### ***Prenatal Obstetric Care***

A missed period was the first sign of pregnancy for around forty percent of participants but roughly a third experienced morning sickness and/or other physical symptoms, such as sore nipples, headaches and lethargy. Eight women just knew they had conceived and two in this group confirmed their pregnancies with a home test which in one case involved checking her own mucous cycle and temperature. Only one woman had no idea she was pregnant before being told by the doctor. Nine women had realised their condition by the fourth week of pregnancy and

twenty-two by the eighth week. Eight participants, however, were not aware of their pregnancies until the second trimester and one woman did not realise her condition until the sixth month of pregnancy.

All participants received prenatal obstetric care and all but one visited their general practitioner in the first instance<sup>91</sup>. Three indicators are normally used to assess the adequacy of prenatal obstetric care (Farquhar & Jamieson, 1994). Namely, onset of care during the first trimester, a minimum of thirteen attendances and book-in for delivery by the fifth month of pregnancy.

**Figure 8.12: Three indicators on the adequacy of prenatal obstetric care as a proportion of the total group**

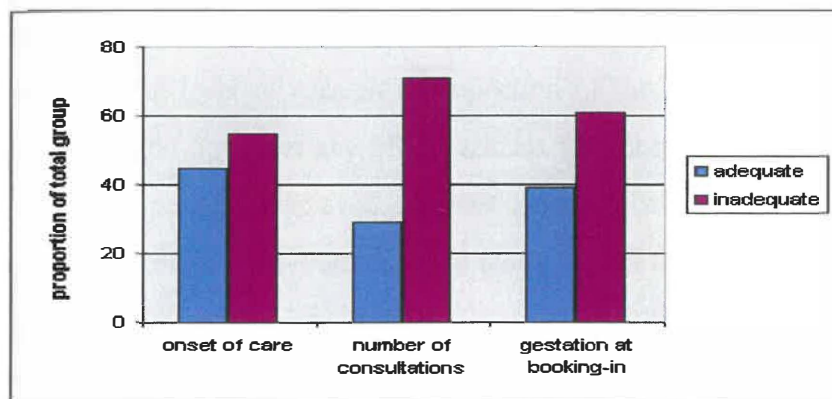


Figure 8.12 displays the adequacy of prenatal obstetric care in terms of these three indicators. Fourteen women commenced care during the first trimester whereas thirteen began in the second and four did not see a maternity service provider until the third trimester of pregnancy. On average, onset of prenatal care took place at sixteen weeks. Twenty-two women made less than thirteen attendances for prenatal obstetric care during pregnancy whereas nine attended thirteen or more times<sup>92</sup>. On average, this group of women had ten consultations during pregnancy. Although twelve women had booked-in for delivery by the sixth month of pregnancy, nineteen did not complete this process until the last trimester of pregnancy including six women who booked-in between thirty and thirty-eight weeks gestation. Mean gestation for completion of the booking-in procedure was twenty weeks. Each indicator, therefore, suggests the majority of women in this study received an inadequate level of prenatal obstetric care.

<sup>91</sup> One woman went straight to an obstetrician.

<sup>92</sup> This includes visits to a general practitioner, midwife, obstetrician and/or the hospital's antenatal clinic.

**Figure 8.13: Indicators of adequate prenatal obstetric care by number as a proportion of the total group**

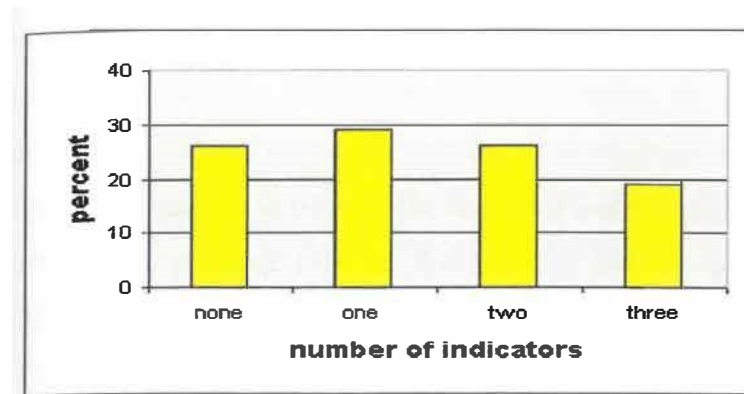


Figure 8.13 displays the number of indicators for which participants received an adequate level of care as a proportion of the total group. Although twenty-six percent did not meet any of the criteria for adequate prenatal obstetric care, seventy-four percent displayed at least one indicator of adequate care. Indeed, just under a fifth of the women in this study met all three criteria.

**Figure 8.14: Number of visits to maternity service providers as a proportion of total participants receiving care from each provider**

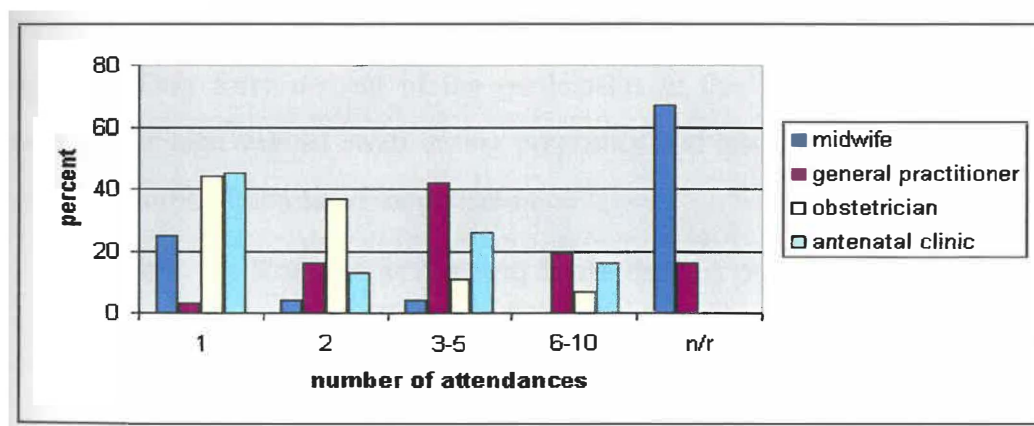


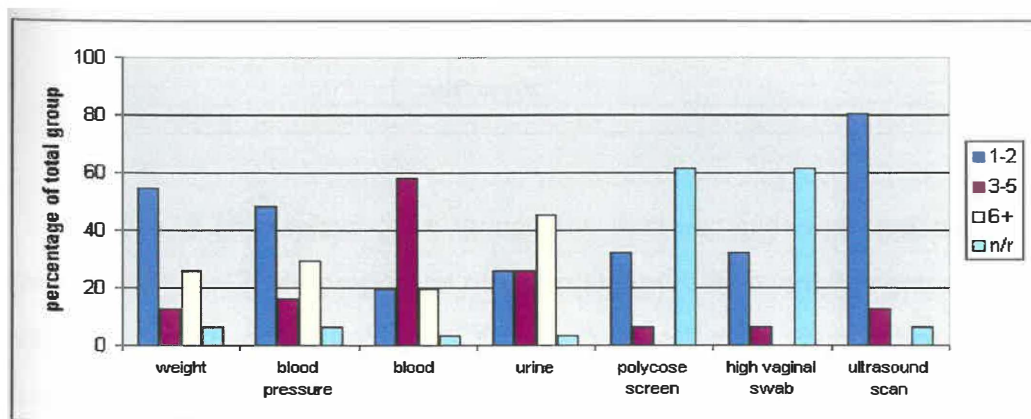
Figure 8.14 summarizes the number of times participants had contact with each maternity service provider. Although eight women received general practitioner care once or twice during pregnancy, sixty percent of all participants made three or more visits to their general practitioner and six women saw this provider six to ten times. Of the twenty-four women who had an independent midwife, only two women had more than one visit<sup>93</sup>. Similarly, almost half of the twenty-six women who received care from an obstetrician during pregnancy saw



him once although thirty-eight percent saw him twice and five women had three to ten consultations with this provider. Almost sixty percent of all participants attended the antenatal clinic once or twice but twenty five percent made three to five attendances and five women visited this facility six to ten times during pregnancy. In general, therefore, the number of attendances for prenatal obstetric care ranged from one to twenty-one but the mean number of attendances was nine and most women received care on four, five or thirteen occasions. Only two women had less than four consultations during pregnancy.

Figure 8.15 displays the routine procedures administered during pregnancy as a proportion of the total group. It appears all but one of the women in this study had their blood and urine screened at least once and roughly seventy percent provided specimens on three or more occasions. Indeed, forty-five percent of all participants gave six or more urine specimens and twenty percent gave six or more blood samples. Ninety-four percent of all participants also had an ultrasound scan as well as weight and blood-pressure screens at least once during pregnancy. Just under half of those in this group had their weight and blood-pressure checked on three or more occasions. Furthermore, a third of those who experienced an ultrasound scan had this procedure administered two or three times during pregnancy. Only forty percent of the participants in this study had a polycose screen and/or high vaginal swab during pregnancy and less than ten percent had these procedures administered more than once<sup>94</sup>.

**Figure 8.15: Routine screening tests during pregnancy as a proportion of the total group**



<sup>93</sup> In many instances the independent midwives, and to a lesser extent, the general practitioners did not transfer the details of client consultations from their own records to the client's hospital file.

<sup>94</sup> These levels are unacceptable (Farquhar & Jamieson 1994; Enkin et al 1996)

## Prenatal Cognitive Mediators

A number of prenatal cognitive processes seem to mediate childbirth outcomes. This study measured feelings of trust, confidence, control and expectations of a positive outcome. The following discussion examines the use of these mediators among participants in this study. In addition, this section considers whether the development and use of these mediators was in any way influenced by maternal parity, experience of obstetric complications and satisfaction with maternity care.

### Trust

Participants were asked to rate how much they trusted the doctors and midwives involved with their care on a scale of zero (not at all) to four (completely). The two measures were combined to give an overall trust score. The mean rating for trust in midwives was 3 whereas that for doctors was 2 and the combined score yielded a mean of 2.75. Such findings suggest the women under study invested a moderate degree of trust in maternity service providers overall although midwives were clearly trusted more than doctors.

**Figure 8.16: Trust in doctors, midwives & maternity professionals overall as a proportion of the total group**

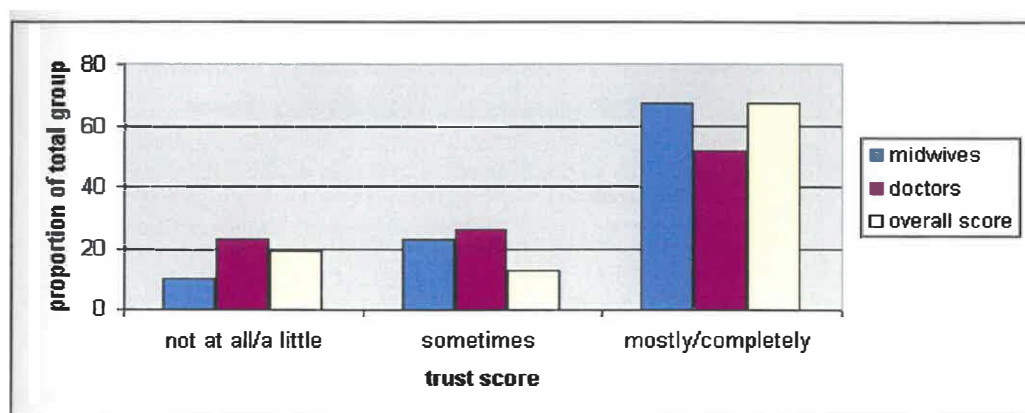


Figure 8.16 displays trust ratings for doctors, midwives and maternity professionals overall as a proportion of the total group. Although ten percent of all participants said they had little or no trust in their midwives, twenty-three percent placed little or not trust in doctors. Similarly, two-thirds of the women under study said they mostly or completely trusted their midwives but slightly more than half placed doctors in this category. Overall, almost a fifth of the women in this study expressed little or no trust in maternity service providers whereas thirteen percent



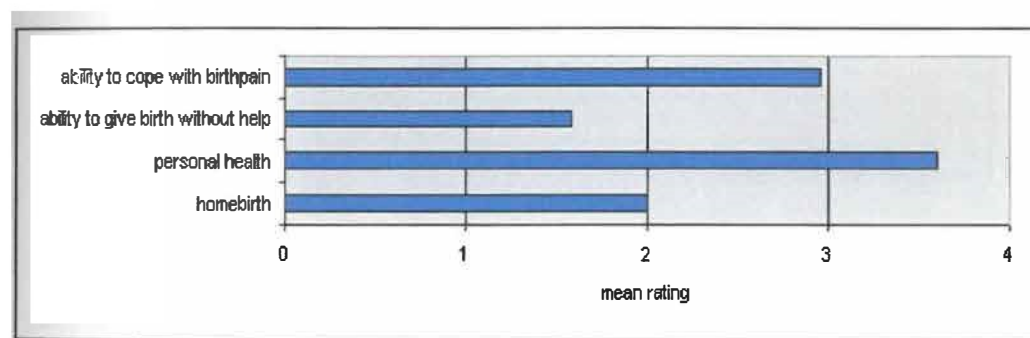
felt they could sometimes trust their professionals. Roughly half of all participants said they mostly trusted their maternity professionals but only nineteen percent placed complete trust in the care provided by doctors and midwives.

## Confidence

Participants were asked to complete four confidence ratings. The first explored confidence in ability to give birth at home instead of in a hospital. The second examined confidence in personal health. The third looked at confidence in ability to give birth without help (from maternity service professionals). And the final question considered confidence in ability to cope with birthpain.

Figure 8.17 presents mean ratings for each confidence item. Participants were least confident about their ability to give birth without help from maternity service providers but almost half felt confident enough to homebirth. In contrast, participants were very confident about their ability to cope with birthpain and less than a quarter said they did not feel confident in this respect. Furthermore, almost all participants expressed complete confidence in their own health.

**Figure 8.17: Mean ratings for the four confidence measures<sup>95</sup>**



## Control

Two measures were used to assess perceptions associated with control during childbirth. The first open-ended question simply asked participants to identify who the 'boss' would be when they gave birth<sup>96</sup>. The second asked participants to rate the amount of control doctors, midwives, themselves, their partner and/or their whānau would have during labour and delivery.

Figure 8.18 summarises participants views on the boss as a proportion of the total group. Roughly half of the women in this study felt the main responsibility for decision-making during childbirth lay with either themselves and their whānau but thirty percent felt maternity professionals complete control of

<sup>95</sup> 0=not confident, 1=a little confident, 2=sometimes confident, 3=mostly confident, 4=completely confident

childbirth events. A quarter gave themselves sole charge and six percent said their whānau would be the boss. In general, roughly forty percent of all participants felt decision-making would be a team effort. Twenty-three percent said themselves and their whānau would have joint responsibility but six percent, respectively, felt the responsibility would be shared between themselves and the maternity professionals or themselves, their whānau and the professionals. Of the nine women who felt decision-making would involve themselves and their whānau, seven said the responsibility would mainly rest with themselves and their partner. Less than a quarter of participants felt their partner's would be part of the decision-making process.

**Figure 8.18: Perceptions on the boss during labour and delivery as a proportion of the total group**

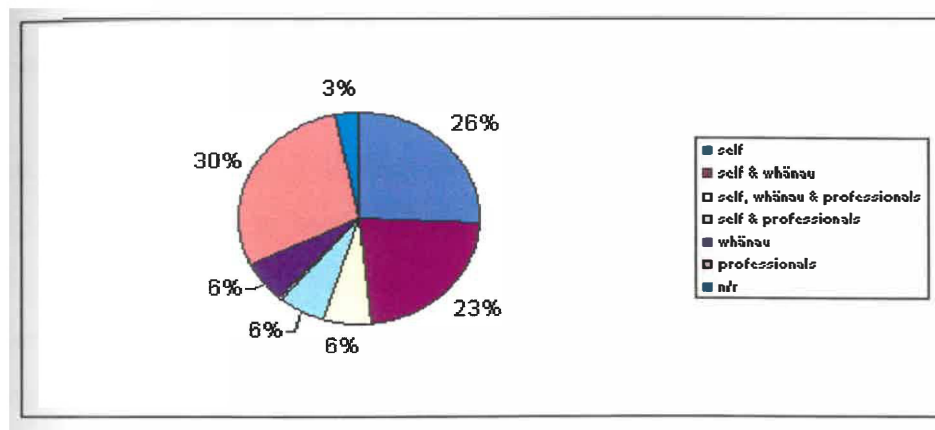
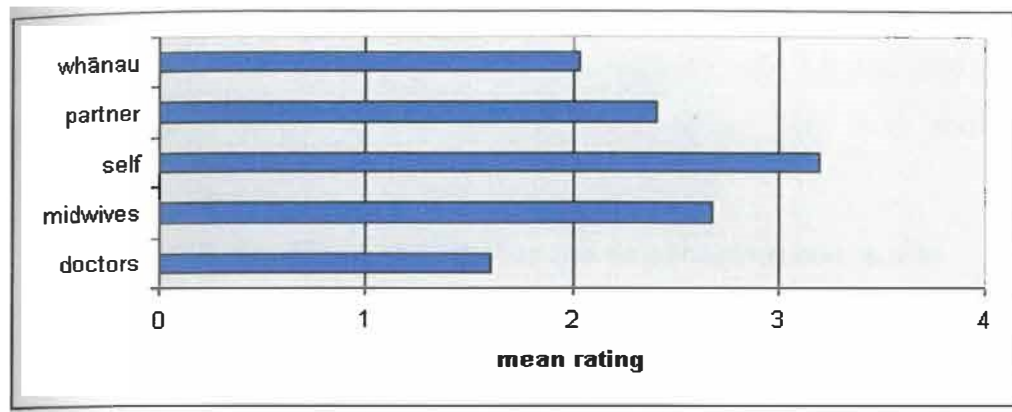


Figure 8.19 displays mean ratings on the amount of control each party would have over childbirth events. In general, participants gave themselves most control and doctors least control. The mean rating for self control was 3.19 and sixty-one percent the women in this study anticipated complete control over events. Only four women felt they would have no control. Mean control for midwives was 2.67. A third of participants said midwives would have complete control of childbirth events and twenty-two percent felt midwives would have a lot of control. Partners and whānau were given a moderate degree of control although the mean rating for partners was slightly higher at 2.41. On one hand, a third of participants gave their partner's a lot of control whereas nineteen percent placed their whānau in this category. On the other hand, however, twenty-six percent gave their partner's little or no control and a third said their whānau would be in this

<sup>96</sup> In this context, the term 'boss' was used to describe the person or people in charge of events.

position. Doctors were given the least control over childbirth events at a mean rating of 1.61. Almost half of the participants in this study said doctors would have little or no control over childbirth events.

**Figure 8.19: Mean ratings on the amount of control over childbirth events<sup>97</sup>**



### Expectations

Four types of expectations were examined. Firstly, participants were asked about their expectations of an ideal birth, that is did they have a concept of ideal birth; did they expect to have an ideal birth and did they anticipate the need for help. The second set of questions explored perceptions on the importance of preparation and obstetric care<sup>98</sup>. Thirdly, a number of questions looked at the expectations associated with birthpain, that is whether participants felt able to cope with birthpain and/or expect pain-relief<sup>99</sup>. And fourthly, a series of questions explored participants expectations a positive outcome.

Figure 8.20 displays mean ratings for each expectation measure. Mean ratings for the importance items were highest for preparation at 3.3 then obstetric care at 2.8 and lowest for antenatal classes at 1.6. Indeed, seventy-five percent of all participants felt preparation was most important whereas little more than half expected obstetric care would have a positive impact on childbirth events. In stark contrast, the majority of participants believed class attendance would be of little or no benefit. Indeed, only six women expected antenatal classes would help them to have a better experience<sup>100</sup>. Twenty-one women had thought about their ideal birth experience although four in this group said they had only given it a little thought.

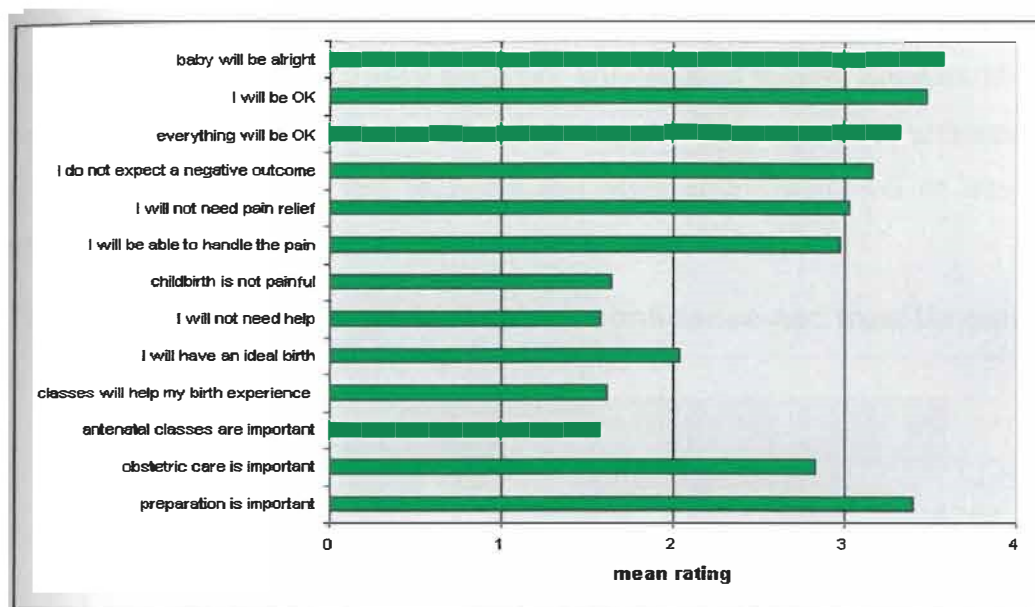
<sup>97</sup> 0=no control, 1=not much control, 2=some control, 3=a lot of control, 4=most control

<sup>98</sup> It was assumed women who rated these factors as important did so because they expected them to have a positive impact on their childbirth experience.

<sup>99</sup> The question on ability to cope with pain was included in both the confidence and expectation measures.

The mean expectation of an ideal birth, at 2.1, suggests expectations about whether their ideal birth would actually happen were somewhat ambivalent among this group of women. Ten women were able to say why their ideal birth might not happen. Of these women, seven felt hospital rules and regulations would prevent an ideal birth whereas three believed it would not happen because of complications. Most participants also expected to have assistance from maternity professionals during childbirth. The mean response to this question was 1.6 and only seven women felt they would be able to give birth without help from maternity professionals.

**Figure 8.20: Mean ratings for the expectation measures**



0 = disagree with statement, 1=slightly disagree, 2 ambivalence, 3=mostly agree, 4 = complete agreement with the statement

Three measures were used to assess the expectations associated with birthpain. As the mean rating of 1.6 indicates, participants mostly disagreed with the statement that childbirth would not be painful. Although thirteen participants said they expected severe or excruciating pain, twelve were ambivalent and six women did not expect childbirth to be painful at all. Furthermore, the majority expected they would be able to cope with birthpain and did not anticipate the need for pain-relief. Only five women expected pain-relief during labour.

Nine participants did not wish to answer the question about whether they expected a negative outcome<sup>101</sup>. However, eighty-three percent of the remaining

<sup>100</sup> Seven participants attended antenatal classes during this pregnancy, ten participants had never been to an antenatal class and fourteen participants had attended one or two classes during a previous pregnancy.

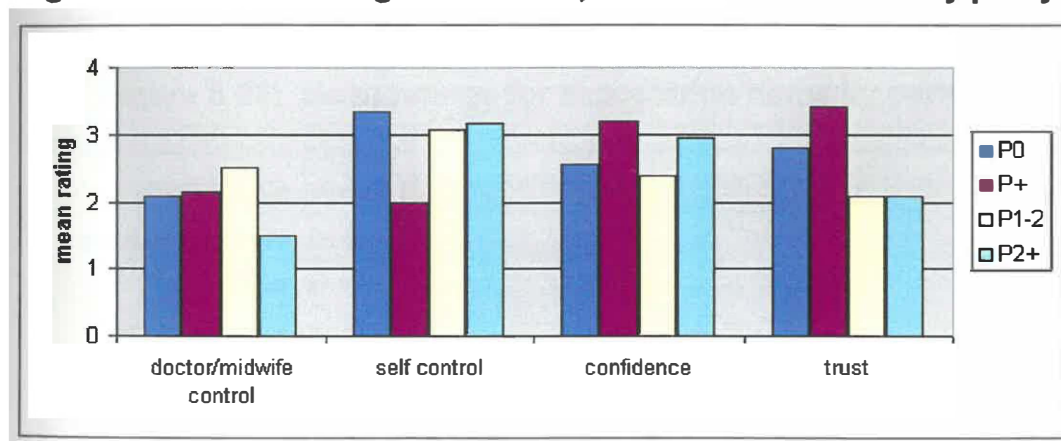
<sup>101</sup> This suggests the wording of this question may have been inappropriate.

women said they did not expect a negative outcome. Furthermore, eighty-one percent of all participants said they expected everything to be alright including themselves and the baby. Only six women indicated ambivalent or negative expectations. Two, in this group, did not expect everything to be alright and both women felt their babies were more likely to be OK than themselves. Four participants were unsure about whether there would be a positive outcome for themselves, their babies or their experience in general.

### Cognitive mediators by parity & obstetric complications

Figure 8.21 displays mean control, confidence and trust ratings for the main parity groups. In comparison with women who had previously given birth ( $P_+$ ), nulliparous participants ( $P_0$ ) gave maternity professionals slightly less control but themselves considerably more control over childbirth events. Furthermore, nulliparous women were less confident and invested a lower level of trust in maternity services providers.

**Figure 8.21: Mean ratings for control, confidence and trust by parity**



Further differences were evident when the data for participants who had given birth on one or two previous occasions ( $P_{1-2}$ ) was separated from that for women who had more than two previous births ( $P_{2+}$ )<sup>102</sup>. In comparison with  $P_0$  and  $P_{2+}$  groups,  $P_{1-2}$  women gave maternity professionals the most control and themselves least control over childbirth events. In addition,  $P_{1-2}$  participants displayed the least confidence. On the other hand,  $P_{2+}$  women gave maternity professionals the least control over childbirth events and displayed the highest level

<sup>102</sup> Among multiparous women, it is often said it takes at least two births for women to develop an awareness of their own, particular birthing style (personnel experience and informal discussions with other mothers).



of confidence. In comparison with the  $P_{1-2}$  group,  $P_{2+}$  women perceived themselves as having slightly more control and displayed considerably higher levels of confidence although there was no difference in mean trust ratings.

Figure 8.22 presents the mean expectation ratings by parity. In comparison with the  $P_+$  group, nulliparous participants were considerably more likely to expect an ideal birth and antenatal classes would help them to have a better experience. Nulliparous women also expected childbirth to be more painful, were less confident about their ability to handle the pain and more likely to say that they would need pain relief. In addition, women in the  $P_0$  group were more likely to expect a negative outcome and less likely to think that everything would be alright. Among parous women, those with two or more previous births were considerably more likely to say that childbirth was not painful and believe that they would be able to cope without pain-relief as well as give birth without assistance from maternity professionals. In addition,  $P_{2+}$  participants were considerably less likely to expect a negative outcome and were more confident everything would be alright. In contrast,  $P_{1-2}$  participants were more likely to expect obstetric care and antenatal classes would have a positive impact on childbirth events.

**Figure 8.22: Mean ratings for expectation items by parity**

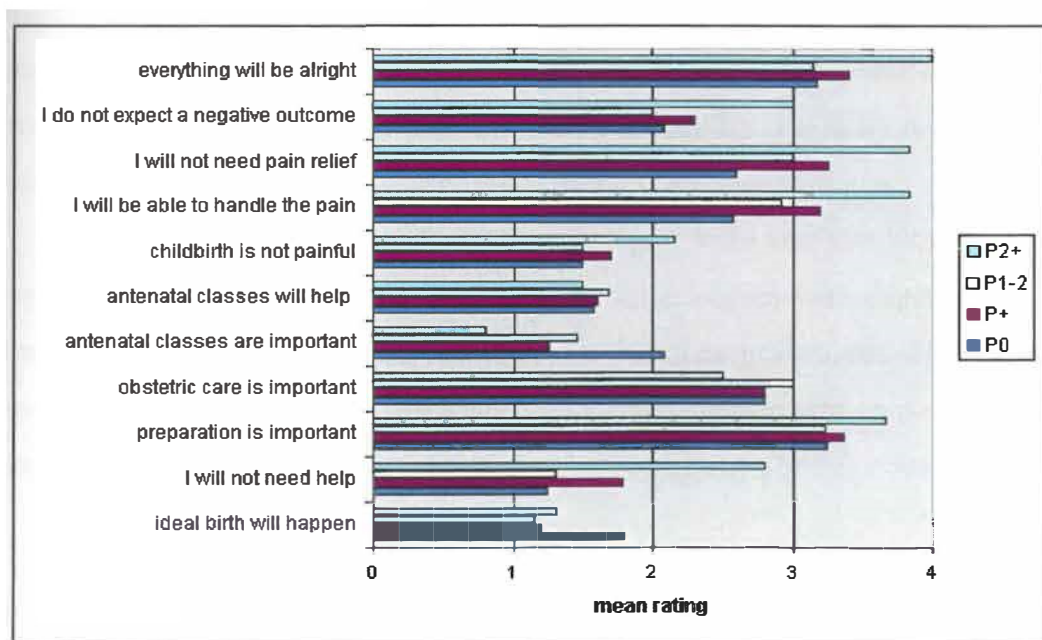


Figure 8.23 presents the mean ratings for control, confidence and trust among parous participants by experience of past complications<sup>103</sup>. In all cases, the mean ratings were lower for participants who had experienced complications. In comparison with those who had no experience of complications, this group of women felt maternity professionals would have slightly less control over childbirth events but gave themselves considerably less control as well as less confidence and less trust in their service providers.

**Figure 8.23: Mean ratings for control, confidence and trust among parous participants by experience of past complications**

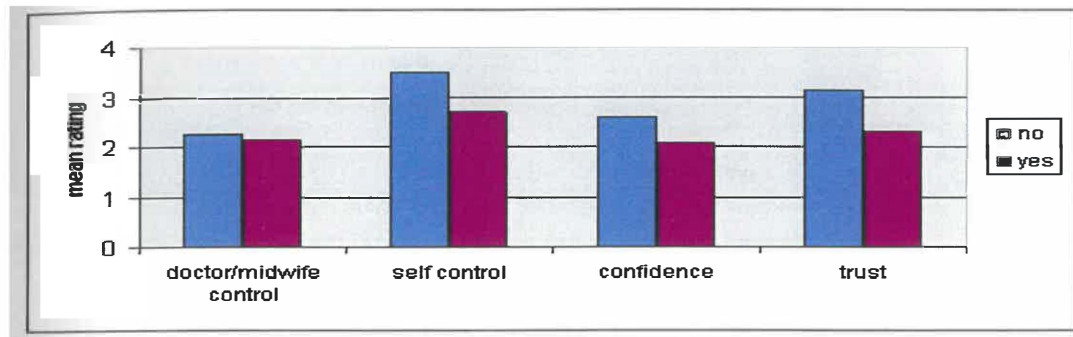
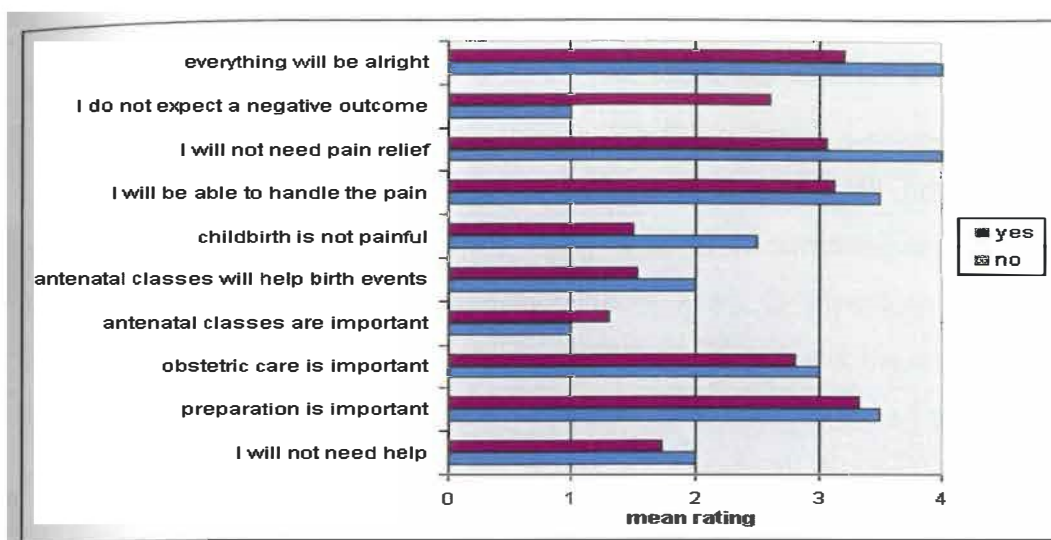


Figure 8.24 presents the mean ratings for expectations among women with experience of obstetric complications during a previous pregnancy. With regard to expectations associated with birthpain, participants with experience of complications felt childbirth would be more painful; were less confident about their ability to cope with labour pain and were considerably less likely to say they would not need pain relief.

Women with experience of past complications were also less likely to say they would not need help. It is interesting to note women with experience of complications felt preparation and obstetric care during pregnancy was slightly less important than antenatal class attendance. However, women with experience of complications were almost three times more likely to expect a positive outcome.

<sup>103</sup> Fifteen of the nineteen P+ participants had experienced one or more obstetric complications during a previous birth.

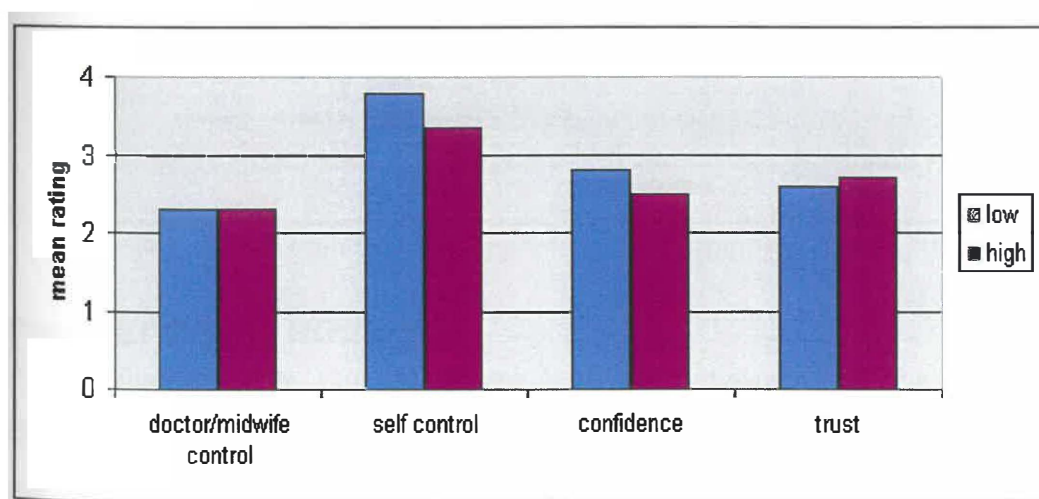
**Figure 8.24: Mean ratings for expectations among parous participants by experience of past complications<sup>104</sup>**



### Cognitive mediators and satisfaction with prenatal care

Participants were asked to rate the degree to which they were satisfied with care during pregnancy on a scale of zero to four. By this measure, approximately one fifth of the participants in this study were ambivalent about satisfaction with prenatal care. However, sixty-four percent indicated they were mostly or completely satisfied and sixteen percent said they were slightly or not at all satisfied with the services provided during this pregnancy. The following discussion compares outcomes for the high and low satisfaction groups.

**Figure 8.25: Mean ratings for control, confidence and trust by feelings of satisfaction with maternity care services in pregnancy**



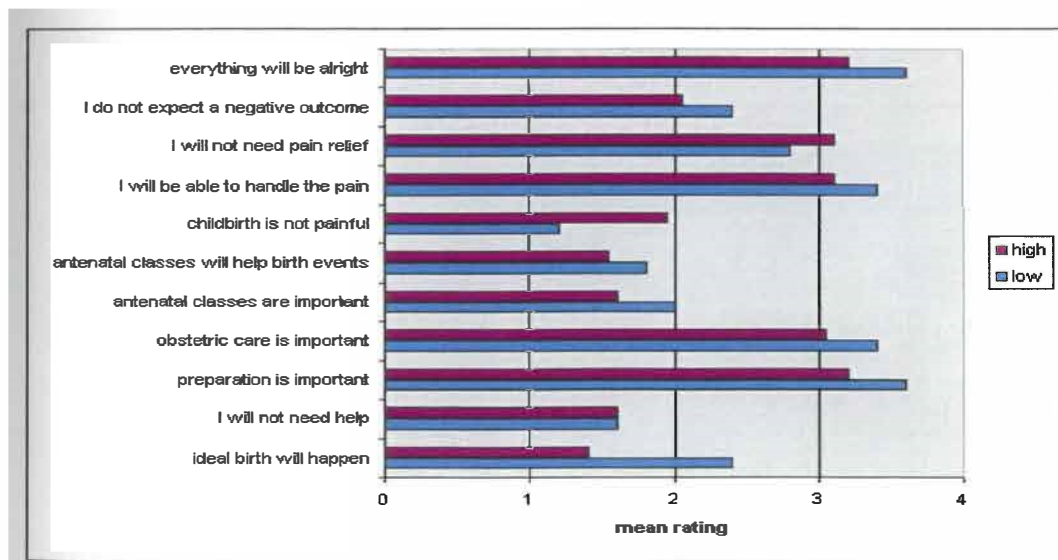
<sup>104</sup> The data on expectations of an ideal birth is excluded as most of the women without experience of obstetric complications did not respond to this question.



Figure 8.25 presents the mean ratings for control, confidence and trust by satisfaction with prenatal care. In comparison with highly satisfied women, the low satisfaction group gave themselves more control over childbirth events, showed higher levels of confidence and displayed slightly less trust in maternity service professionals. Both groups gave doctors and midwives a moderate degree of control over childbirth events.

Figure 8.26 compares the expectations of women with high and low satisfaction. In comparison with their highly satisfied counterparts, women in the low satisfaction group were considerably more likely to expect an ideal birth although there was no difference in expectations associated with the need for help. Women in the low satisfaction group were also more likely to expect preparation, obstetric care and antenatal classes would be beneficial. Women in the low satisfaction group expected more pain and were more likely to expect pain-relief but had a higher expectation of their own ability to cope. In general, women in the low satisfaction were more optimistic and less likely to expect a negative outcome.

**Figure 8.26: Mean ratings for expectations by satisfaction with prenatal care**



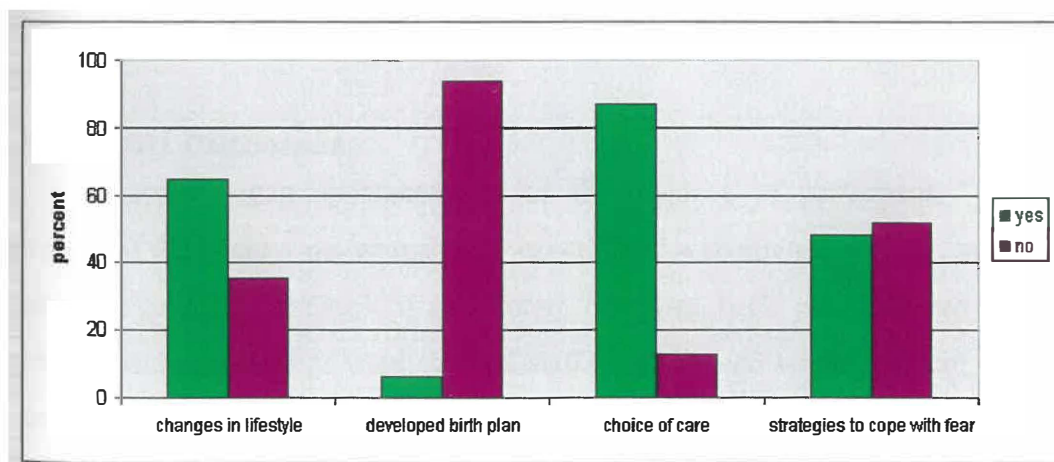
### ***Prenatal Coping Strategies***

When asked to rate the degree to which pregnancy had changed their lifestyle, two thirds of the participants in this study indicated considerable or complete change, sixteen percent indicated a moderate change and just under one fifth said their lifestyle had changed slightly or not at all. The following section,

therefore, examines the use of cognitive or behavioural coping strategies during pregnancy<sup>105</sup>

Figure 8.27 summarizes the four types of coping strategies utilized by participants as a proportion of the total group. In general, sixty-five percent were able to identify at least one way in which their lifestyle had changed. Of these women, ninety-five percent talked about the need for more food and rest, forty-five percent said they kept to themselves or socialized less and twenty-five percent noticed changes to the way in which they thought about things. Some in this group implemented specific changes which they hoped would improve their birth experience. In particular, sixty-five percent took up exercise or stretching routines, forty percent practiced relaxation techniques, thirty-five percent reduced their alcohol and cigarette intake and fifteen percent tried to eat a healthier diet. However, roughly half of the participants in this study were able to identify ways in which they could be healthier<sup>106</sup>. Of these women, a third said they could eat better foods and more foods with iron; twenty-seven percent said they could give up smoking; twenty percent felt they should rest more and thirteen percent thought they could exercise.

**Figure 8.27: Coping strategies as a percentage of the total group**



Only two women wrote a birth plan which outlined their ideal birth but eighty-seven percent prepared a choice of care plan and some prepared two or

<sup>105</sup> Excludes previously discussed strategies such as the utilisation of social support, prenatal obstetric care services and antenatal class attendance.

<sup>106</sup> Nine women could not identify a strategy which would make themselves healthier and seven women felt they were already doing everything they could.

three<sup>107</sup>. This is not surprising given that the maternity hospital had a policy which ensured the choice of care plan was completed during the booking-in procedure.

When asked to indicate the degree to which they felt scared about childbirth on a five-point scale, two-thirds of all participants said they were not at all scared but thirty percent felt extremely fearful. Within this context, participants were asked to identify their greatest fear(s). Of the eighteen women who responded to this question, almost forty percent expressed their fear of complications and/or obstetric intervention and thirty percent mostly feared birthpain, especially the length of pain and their ability to cope. Three women were mostly scared of ripping during parturition, five feared for their baby's health, two expressed a fear of postnatal depression and two mostly feared not being able to breastfeed. Seventeen participants identified strategies which helped them to cope with feelings of anxiety or fear. Four types of coping strategies were evident and some women used more than one strategy. In particular, approximately forty percent identified breathing and/or relaxation techniques; forty-one percent also talked about focussing on the positive, especially the baby and/or other women who have successfully given birth. Forty-one percent said they simply blocked feelings of fear or anxiety<sup>108</sup>. The final strategy which three women used to alleviate anxiety was whānau support, or the process of seeking reassurance from others.

### ***Perinatal Outcomes***

Labour began spontaneously for the majority of participants<sup>109</sup>. Sixty percent of the twenty-one women who experienced a spontaneous onset, said their labour began with feelings of discomfort or lower back pain whereas twenty percent said contractions were the first sign of labour and twenty percent did not realise they were in labour until their waters had broken. A range of perinatal outcomes provide an indication of maternal and infant wellbeing during labour and delivery. The following section examines the number maternity professionals and whānau members present, physiological indicators of maternal and infant health and the use of obstetric intervention techniques.

<sup>107</sup> The choice of care plan identifies which maternity professionals have consent to provide care.

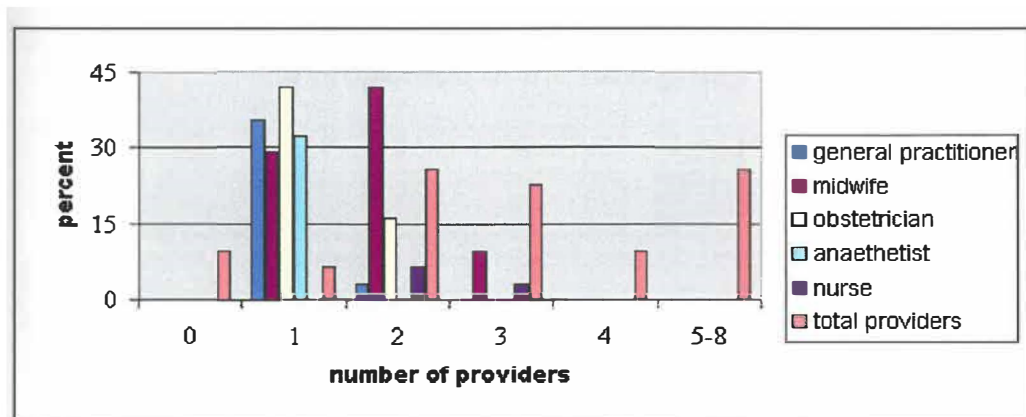
<sup>108</sup> Some felt feelings of fear may have harm their baby.

<sup>109</sup> Nine women had their labour induced and one elected to deliver by caesarean delivery at thirty-seven weeks gestation.

## Social support during labour & delivery

Maternity service professionals and/or whānau members, including partners or friends, were the main sources of support during labour and delivery. Figure 8.28 summarizes the number of maternity service providers present during labour and delivery as a proportion of the total group. On average, participants were attended by three professionals. Thirty to forty percent had one general practitioner, one midwife, one obstetrician and/or an anaesthetist associated with their care. However, fifty-two percent received care from two or more midwives, sixteen percent were attended by two obstetricians, nine percent had two or more nurses associated with their care and three percent received visits from at least two general practitioners. Overall, eighty-five percent of the participants in this study received care from at least two maternity professionals during labour and delivery. Indeed, only five women had less than two professionals associated with their care<sup>110</sup>. Forty percent received care from midwives working with the obstetricians; twenty percent were attended by a team of midwives, obstetricians and general practitioners; sixteen percent were attended by a midwife/general practitioner team, thirteen percent were attended by midwives only and one woman received general practitioner care only.

**Figure 8.28: Number of maternity professionals present during labour and delivery as a proportion of the total group**

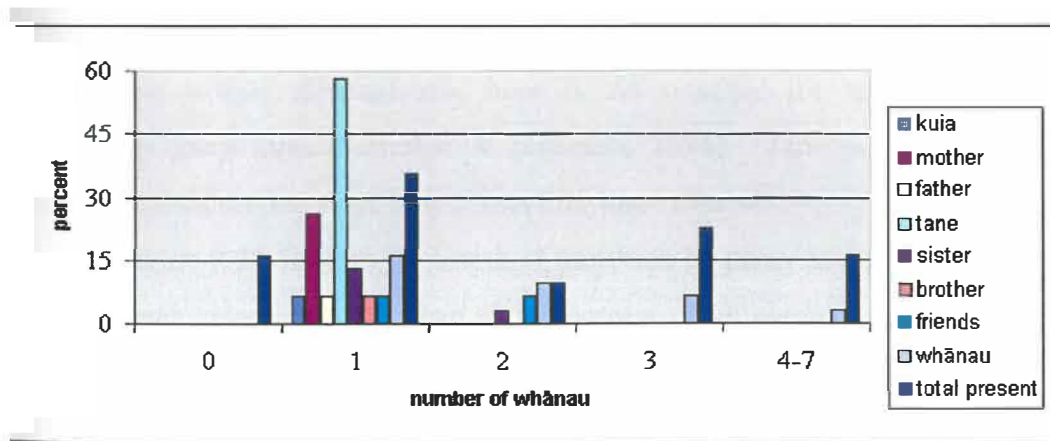


In addition to attendance by maternity service professionals during labour and delivery, the vast majority of participants were also supported by their whānau. Figure 8.29 displays the type of whānau present during labour and delivery as a

<sup>110</sup> The hospital notes for three of these women suggested they were not attended by professionals at all.

percentage of the total group. Partners, mothers and sisters were the most common sources of whānau support. Almost three-fifths of all participants had their tane with them whereas twenty-six percent gave birth with support from their mother and thirteen percent had at least one sister present. Six percent, respectively, received support from a kuia, father, brother and/or one or two friends. Eleven women had medical files which stated that whānau members were present but did not identify their relationship to the birthing mother. Of these women, it seems five received support from one whānau member whereas six had two or more whānau members present. On average, therefore, participants were supported by two whānau members during labour and delivery. More specifically, just over a third of all participants had support from one whānau member whereas ten percent had two members present and thirty-nine percent gave birth in the presence of three to seven whānau members. Sixteen percent of the participants in this study did not have a whānau member present during labour and delivery. When whānau members and maternity professionals are summed, participants, on average, had five other people present during childbirth. More specifically, six percent had one or two other people present, forty-five percent had three to five other people present and forty-two percent were supported by six to ten other people. Two women had files which suggested neither maternity service professionals nor whānau members were present during labour or delivery.

**Figure 8.29: Whānau members present during labour and delivery as a proportion of the total group**



### Length of labour & obstetric intervention

In nulliparous women, the latent phase of labour is expected to last around twelve hours and the accepted rate of cervical dilatation during established labour

is one centimeter per hour (Farquhar & Jamieson, 1994). Normal first stage labour, therefore, is about ten hours but a faster rate of progress is expected in parous women. At the hospital under study, maternity staff did not keep records on the duration of labour until it was established.

**Figure 8.30: Length of first stage labour by parity as a percentage of the total in each category<sup>111</sup>**

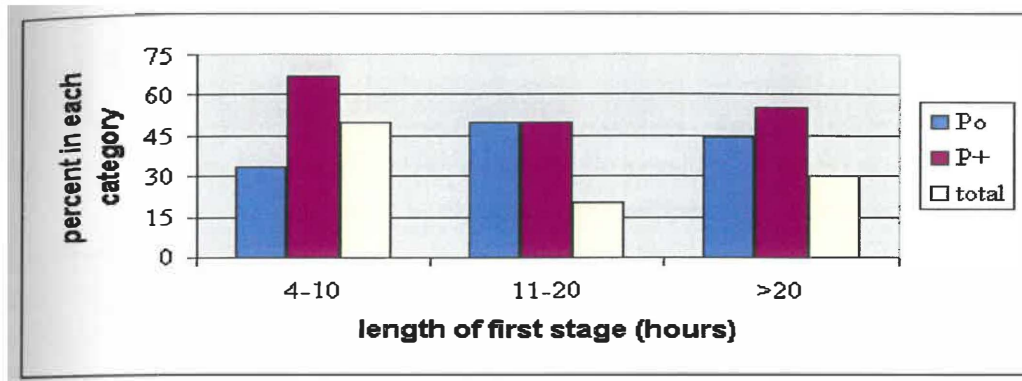


Figure 8.30 summarizes the length of first stage labour as a proportion of the total in each category. On average, the mean length of established first stage labour was fifteen hours. However, roughly half of the participants in this study experienced a first stage labour which lasted less than ten hours. Furthermore, twenty percent experienced a first stage labour which lasted eleven to twenty hours and thirty percent laboured for longer including one woman whose first stage lasted fifty-five hours. Contrary to the expected norm, parous women, rather than nulliparae, were more likely to labour longer than twenty hours. The length of transition, or second stage labour, is expected to last up to two hours for nulliparous women although one hour is the standard for women who have previously given birth (Farquhar & Jamieson, 1994). Among participants, the mean length of second stage labour was fifty-three minutes.

Figure 8.31 displays the length of transition by parity as a proportion of the total in each category. More than eighty percent of all participants went through transition in less than an hour and the vast majority, in this group, delivered within thirty minutes. In comparison with their nulliparae counterparts, parous women were twice as likely to deliver within the hour. Five participants experienced a second stage labour which lasted longer than an hour and for two women this

<sup>111</sup> Excludes one woman who elected to have a caesarean delivery at 37 weeks gestation and did not go into labour.



period lasted longer than two hours. As expected, four of these five women were nulliparous.

**Figure 8.31: Length of second stage labour by parity as a proportion of the total in each category**<sup>112</sup>

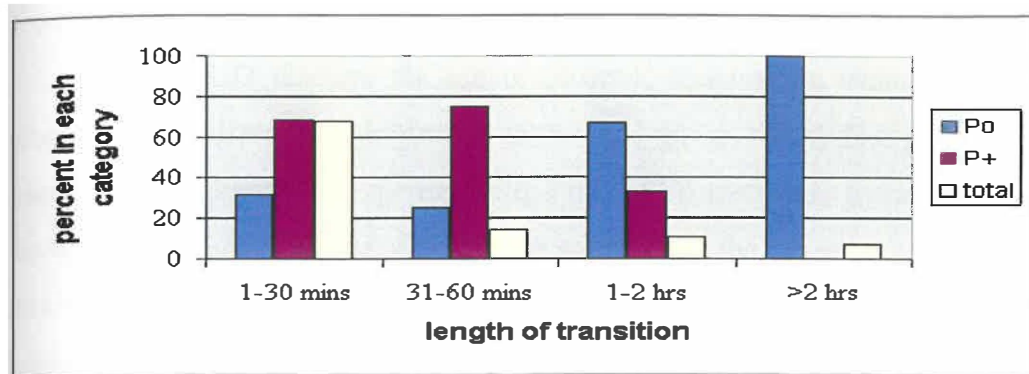
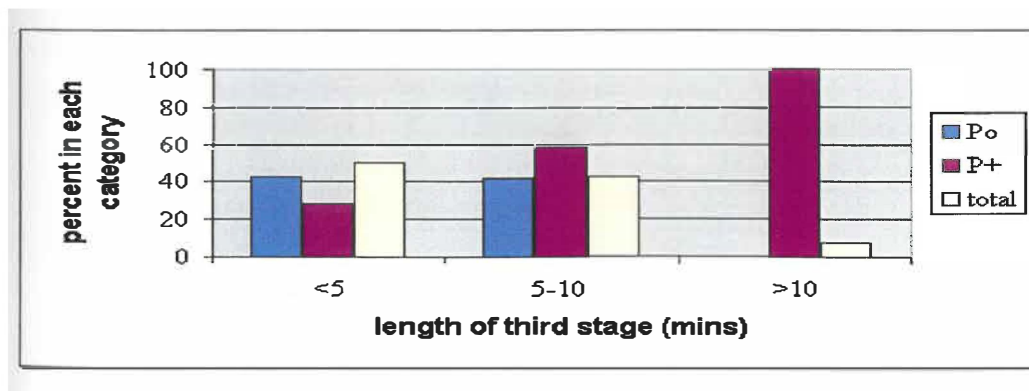


Figure 8.32 displays length of labour by parity as a proportion of the total in each category. The length of third stage labour is expected to last five to ten minutes for parous women and up to twenty minutes for nulliparae (Farquhar & Jamieson, 1994). However, ninety-six percent of all women who gave birth vaginally received an ecbolic injection to facilitate delivery of the placenta<sup>113</sup>. Not surprisingly, therefore, the mean length of third stage labour among participants in this study was relatively short at six minutes.

**Figure 8.32: Length of third stage labour as a proportion of the total in each category**<sup>114</sup>



Overall, fifty percent delivered the placenta in less than five minutes and forty-three percent completed the third stage of labour within five to ten minutes. Two women completed this stage in eighteen and twenty-two minutes and both of these women were parous. Indeed, parous women were more likely to experience a

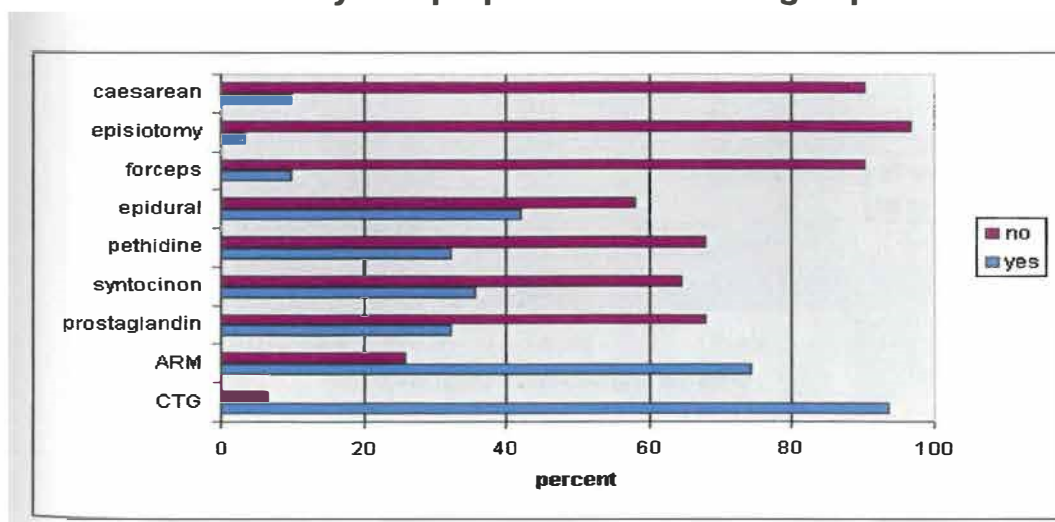
<sup>112</sup> Excludes caesarean deliveries, n=3.

<sup>113</sup> Mostly syntometrine IMI but sometimes separate IVI doses of syntocinon and/or ergometrine.

longer third stage labour. Only one woman refused to have an echolic injection and she completed the third stage of labour in three minutes. The mean length of labour was seventeen hours. Forty percent of the women in this study laboured for ten hours or less whereas sixty percent laboured for more than ten hours. Among women in this latter group, the majority laboured for twenty hours or more.

Figure 8.33 displays the use of obstetric intervention techniques during labour and/or delivery as a proportion of the total group. Ninety-four percent of all participants in this study experienced the use of an electronic foetal monitoring device (CTG) during labour. All of these women had the procedure administered intermittently but three also experienced continuous applications and at least five babies had scalp electrodes inserted for this purpose. On average, this procedure was administered three times during labour but the number of applications ranged from one to seven and fourteen percent of the women in this group had five or more readings. Twenty-four medical files contained the CTG printout which show that this group of women, on average, experienced three hours of CTG procedures during labour. Although thirty-eight percent had less than an hour of CTG , twenty-one percent were monitored for one to two hours and forty-two percent were had more than three hours of CTG including three women who were monitored for seven to nine hours.

**Figure 8.33: Obstetric intervention techniques during labour & delivery as a proportion of the total group**



The second most common obstetric intervention was artificial rupture of the membranes (ARM). At least, three quarters of the women in this study

<sup>114</sup> Excludes caesaren deliveries



experienced this procedure<sup>115</sup>. In most cases, the ARM was combined with at least one other induction technique. Five women, for example, experienced a combination of ARM/prostaglandin and syntocinon, four women were induced with an ARM/syntocinon combination and two had an ARM/prostaglandin combination administered. Roughly a third of all deliveries were induced with prostaglandin and/or syntocinon, respectively. Fifty-five percent of participants had pharmacological pain relief administered during labour and/or delivery. Forty-two percent consented to an epidural and most had at least one epidural top-up. A third of the participants in this study received at least one intra-muscular injection of pethidine and six women had pethidine as well as an epidural. Ten percent of the participants in this study delivered by caesarean section and ten percent experienced a forceps delivery. Episiotomy was the least used intervention technique and two women had the procedure administered during parturition. A number of authors have developed techniques to measure and/or quantify experience of obstetric interventions and the use of obstetric technology during labour and parturition (Oakley, 1980; Elliott et al, 1984; Oakley & Rajan, 1990). Although Oakley & Rajan, (1990) excluded CTG in their calculation of obstetric technology scores, others have included this variable (Oakley, 1980, Elliott et al, 1984). Both approaches have been used in this study.

**Figure 8.34: Obstetric technology scores, with and without CTG, as a proportion of the total group in each score category<sup>116</sup>**

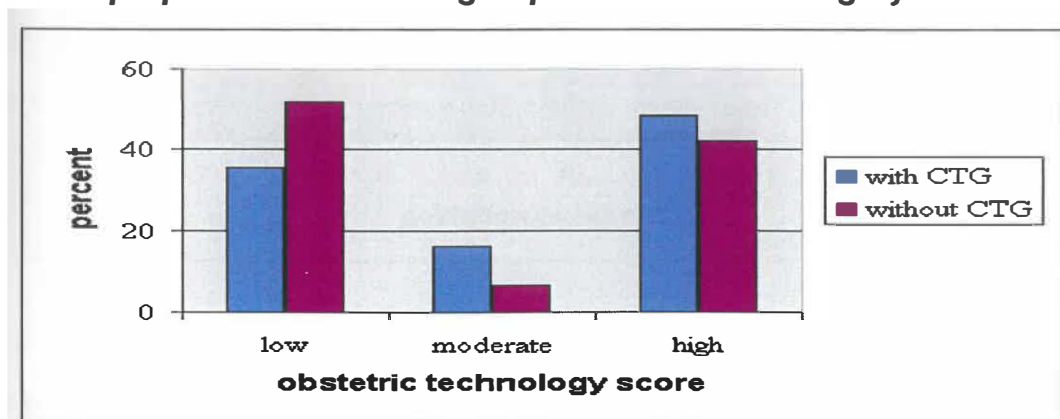


Figure 8.34 presents obstetric technology scores for participants in this study, both with CTG and without CTG, as a proportion of the total group. When

<sup>115</sup> Administration of this procedure was virtually standard as midwives felt an ARM did more good than harm. It is likely, therefore, that more, if not all, participants experienced an ARM.

<sup>116</sup> Scores of <5 were low whereas those between 6 and 10 were moderate and those of 11 or more were high.

CTG was excluded, the mean obstetric technology score was seven. Indeed, just over half of the participants in this study fell into the low intervention category whereas six percent received a moderate level of intervention and forty-two percent were in the high technology group. When CTG was included the mean technology score was eleven. Furthermore, forty-eight percent of the participants in this study fell into the high intervention group, sixteen percent received moderate obstetric technology scores and just over a third were in the low technology category. Either way, roughly forty percent of all participants received a high obstetric technology score.

### Perinatal Health

Two methods were used to calculate infant gestation at the time of delivery. Mean gestation, by the date of last menstrual period (LMP), was 40 weeks whereas mean gestation by dates obtained through ultrasound scan was 39 weeks. Both methods suggested the vast majority of births took place when gestation was at term, that is between 37 to 41 weeks (Farquhar & Jamieson, 1994). However, gestations by scan were considerably less than LMP outcomes.

**Figure 8.35: Infant gestation at delivery by LMP & ultrasound scan as a proportion of the total group**

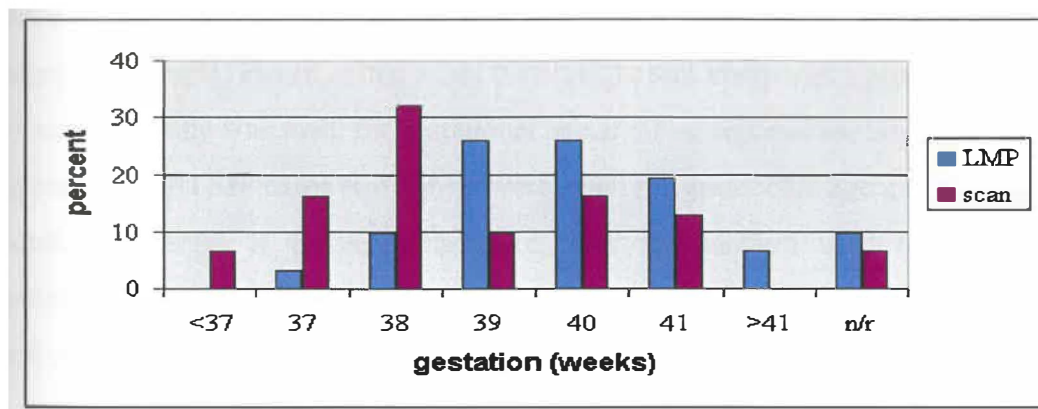


Figure 8.35 displays infant gestation at delivery by LMP and scan as a proportion of the total group. By scan dates, two women delivered pre-term (<37 weeks) but none went post-term (>41 weeks) whereas by LMP dates the opposite was true, no-one delivered pre-term but two infants were post-term. Nevertheless, these methods produced a number of differences in the term data. By scan dates, for example, sixteen percent of all participants gave birth when gestation was 37 weeks; forty-two percent delivered at 38-39 weeks and nineteen percent birthed at 40-41 weeks. In contrast, the LMP data suggested one woman gave birth at 37

weeks; ten percent delivered at 38 weeks; thirty-six percent birthed at 38-39 weeks and forty-five percent delivered when gestation was 40-41 weeks.

**Figure 8.36: Infant birthweight as a proportion of the total group<sup>117</sup>**

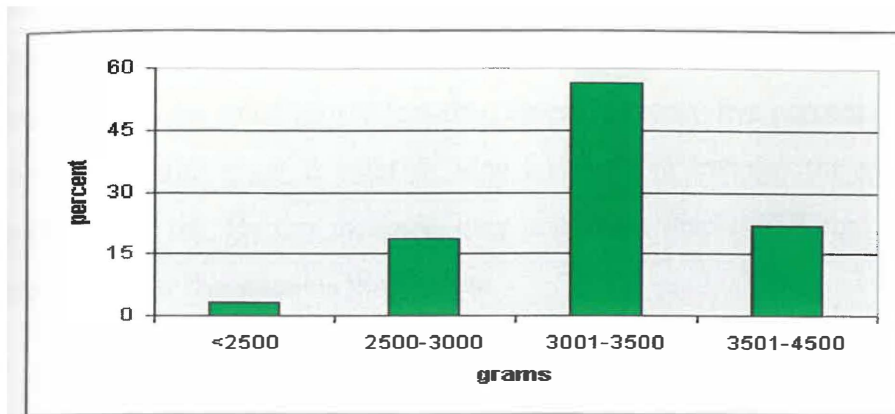


Figure 8.36 displays infant birthweight as a proportion of the total group. The vast majority of infants were clearly of normal weight. More specifically, seventy-eight percent weighed 3000 grams or more and almost two-fifths in this group weighed 3500-4500 grams. Only one baby weighed less than 2500 grams and roughly a fifth weighed between 2500-3000 grams. Although gestation at birth is clearly used to identify infants who are most at risk of possible complications, a more reliable indicator is generally found when gestational age is compared against infant birthweight. Hence, when infant birthweight was compared against gestation by scan one baby was small for gestational age and four fell into the large category. In contrast, by LMP dates two babies were small for gestational age and two were border-line large. It is clear, therefore, that the method used to calculate gestational age may have a significant impact on the identification of at risk infants and the delivery of infant clinical care.

**Figure 8.37: Infant apgar scores as a proportion of the total group**

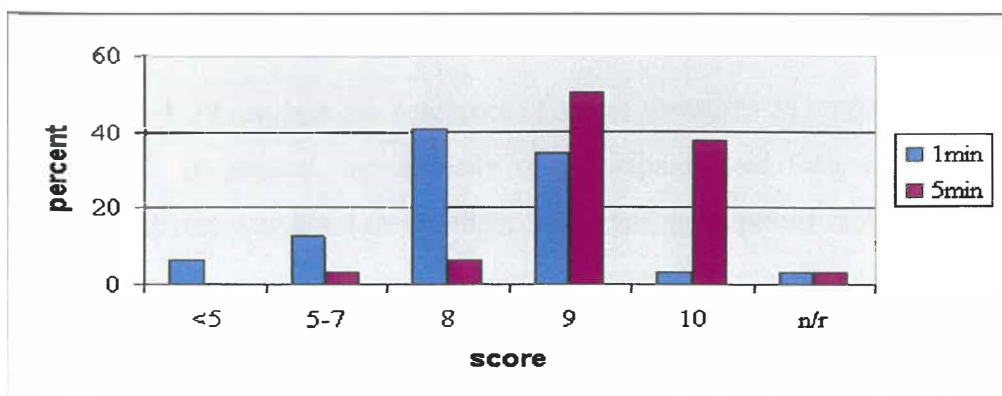


Figure 8.37 displays infant apgar scores at one and five minutes as a proportion of the total group. Mean apgar at one minute was 7.6 whereas at five minutes it was 9. Six percent of the infants in this study scored less than five at the first reading and thirteen percent scored between five and seven. By five minutes, however, only one infant scored less than seven. Seventy-five percent of all infants received an initial apgar of eight or nine and by five minutes the vast majority scored nine or ten. By this measure, only one infant displayed a sign of possible complications at five minutes postpartum.

**Figure 8.38: Infant feeding as a proportion of the total group**

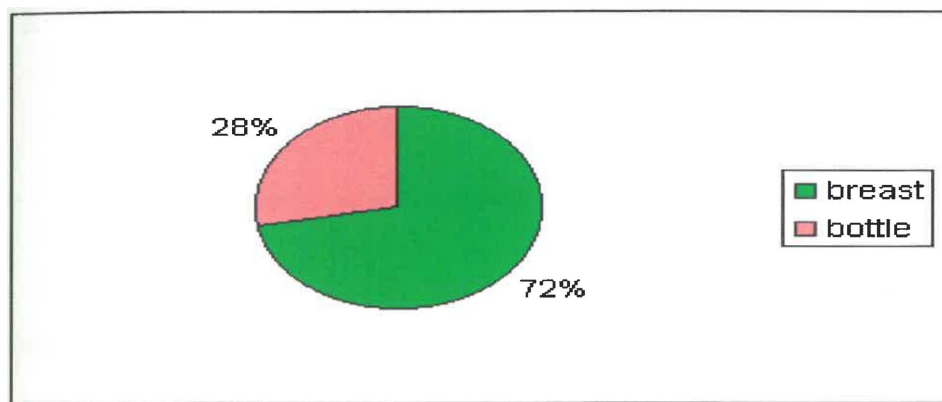


Figure 8.38 displays infant feeding techniques as a proportion of the total group. Clearly, the vast majority of infants were breastfed, with seventy-two percent falling into this category. Nevertheless, slightly more than a quarter of the infants born to participants in this study were bottle fed from the moment of birth.

### ***Postpartum perceptions***

Participants were asked to rate the quality of their labour and delivery experience on separate five-point scales. Participants were also asked to rate the degree of satisfaction with maternity care and their feelings of postpartum wellbeing.

Figure 8.39 displays the outcomes of these measures as proportions of the total group<sup>118</sup>. In general, the majority of participants said their experience of labour and delivery was good or excellent. However, perceptions on the quality of labour were less favourable than for delivery. More specifically, forty-eight percent

<sup>117</sup> One woman had twins, so the total number of babies born was 32.

<sup>118</sup> Those in the low group gave a rating of 0 or 1 whereas moderate = 2 and those in the high group gave a rating of 3 or 4.

of all participants felt their labour was good or excellent but more than a fifth said it was horrible or bad and a third simply said their experience was okay. In comparison, a fifth of all participants felt delivery was horrible or bad whereas six percent were ambivalent about their experience and seventy-one percent said delivery was good or excellent.

**Figure 8.39: Quality of experience, satisfaction with care and postpartum wellbeing as a proportion of the total group**



At 2.97 the mean rating for satisfaction with care during childbirth suggests participants were fairly satisfied with the quality of services received. Indeed, sixty-one percent indicated they were satisfied, or, very satisfied with the quality of care during this period. Nevertheless, thirty-nine percent said they were not satisfied, or were only moderately satisfied with the quality of care received. Furthermore, when given an open-ended opportunity to comment on the quality of services during this period, fifty-two percent of the participants in this study reported a negative aspect of their experience<sup>119</sup>. Seventy-five percent of those in this group felt hospital staff did not follow their wishes and eight women objected to the presence of strange professionals, some of whom provided care, without prior arrangements or consent. Others commented on the loss of control and derogatory attitudes expressed towards themselves and their whānau. Nevertheless, the mean rating for feelings of postpartum wellbeing was high at 3.12 and eighty-one percent of all participants said they felt good or excellent. Six women felt their sense of postpartum wellbeing was bad or poor.

<sup>119</sup> Only one woman made a positive comment about the quality of care received which was that the staff were helpful and there when she needed them.

## ***Hōmai te Waiora ki Ahau* – is it valid and reliable?**

A number of procedures can be used to examine the validity and reliability of *Hōmai te Waiora ki Ahau* as a tool for the measurement of waiora among participants in this study (Hills, 2000). In the first instance, it is clearly important to not only describe the twelve items in this measure but also understand the way in which frequency distributions for each item may deviate from the ideal, bell-shaped curve (Hills, 2000; Tabachnick & Fidell, 1996). It is also important to describe the scale itself and the way in which scores may be influenced by relationships between and within the component items (Tabachnick & Fiddell, 1996). Furthermore, it is important to think about the overall objectives of *Hōmai te Waiora ki Ahau* in terms of what it is measuring, the usefulness of data and the appropriateness of test items (Graham & Lilly, 1984).

### ***Screening for normality***

Although deviations are expected in a small study like this, the assumption that frequency distributions will be symmetrical, or normal, underlies most statistical tests in multivariate analysis and the presence of nonnormal shapes may significantly distort, or degrade, the outcomes of such tests (Graham & Lilly, 1984; Tabachnick & Fiddell 1996)<sup>120</sup>. For each item in a measure, the process of screening for normality is achieved by considering the dispersion, central tendency and distribution of scores. The mean and median provide an indication of central tendency whereas the range and standard deviation illustrate item variability, or dispersion and score distribution is measured in terms of skewness or kurtosis<sup>121</sup>.

Table 8.4 displays frequency data for *Hōmai te Waiora ki Ahau*. A good item is indicated when the mean falls in the middle zone of the scoring system being used (Hills, 2000). In this case, a thirteen point rating scale was administered and the middle zone, thus, ranges from four to nine. Accordingly, nine of the twelve means for *Hōmai te Waiora ki Ahau* items fall within the middle zone. The exceptions are mauri, te ao tawhito and tikanga Māori. Ideally, however, the values for mean and median should match, or be similar, and an inconsistency may be indicative of an irregular score distribution. Of the twelve items in this measure, differences between the mean and median were  $\geq 1$  for whanaungatanga, hinengaro,

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<sup>120</sup> In a large study, items with a nonnormal distribution may need to be re-written or discarded.

<sup>121</sup> Skewness describes the symmetry of distribution, the mean of a skewed variable is not in the centre of the distribution. Kurtosis is a measure of peakedness, values above zero are peaked whereas values below zero indicate a flat distribution.

mauri, mana, te ao tawhito and tikanga Māori. This analysis of central tendency has, therefore, identified a number of irregular distributions but further tests are needed to examine whether such irregularities are significant.

**Table 8.4: *Hōmai te Waiora ki Ahau* by mean, median, standard deviation and range for each item and the total measure**

	mean	median	std deviation	min	max
whanaungatanga	8.7	10	3.151	0	12
tinana	7.4	7	2.54	1	11
hinengaro	8	9	3.172	0	12
wairuatanga	8.8	9	2.915	2	12
mauri	9.5	11	2.5	3	12
whenua	8.2	10	4.072	0	12
mana	7.45	9	3.472	0	12
whatumanawa	7.35	8	3.061	0	12
tikanga Māori	10	11	2.683	0	12
tikanga Pākehā	5.1	5	3.521	0	11
te ao tawhito	9.7	11	2.39	3	12
te ao hou	5.2	5	3.525	0	12
total measure	95.6	95	16.98	61	125

When a distribution is normal, the values of skewness and kurtosis are zero (Tabachnick & Fidell 1996). The coefficients for skewness and kurtosis can, therefore, be used to determine whether a distribution of scores is significantly different from the normal curve (Hills, 2000). The significance of skewness is indicated when the skewness coefficient ( $s$ ) is divided by its standard error ( $s_s$ ). Similarly, the significance of kurtosis is indicated when the kurtosis coefficient ( $k$ ) is divided by its standard error ( $s_k$ ). Outcomes of 1.96 or 2.58 indicate the curve obtained from item scores is significantly different from a normal distribution at the  $p<.05$  and  $p<.01$  levels respectively (Hills, 2000).

Table 8.5 displays the components of *Hōmai te Waiora ki Ahau* by skewness and kurtosis coefficients, the standard error of these coefficients and the outcomes of tests for significance. Significant differences were found for whanaungatanga (skewness = -1.194,  $p>0.01$ ); hinengaro (skewness = -0.833,  $p<.05$ ); mauri (skewness = -1.223,  $p<.01$ ); whenua (skewness = -0.915,  $p<.05$ ), mana (skewness = -0.877,  $p<.05$ ), te ao tawhito (skewness = -1.139,  $p<.01$ ) and tikanga Māori (skewness = -2.490,  $p<.01$ ; kurtosis = 6.752,  $p>.01$ ). For all significant items, the direction of skewness was negative which suggests participants tended to score towards the upper end of the scale for these items. In



addition, the scores for tikanga Māori showed significant positive kurtosis which indicates a higher peak than normal. Such peakedness occurs when responses are clustered too closely together.

**Table 8.5: *Hōmai te Waiora ki Ahau* components by tests for significant skewness and kurtosis**

	$s$	$s_s$	$s/s_s$	$k$	$s_k$	$k/s_k$
<b>whanaungatanga</b>	-1.194	0.421	-2.8	0.99	0.821	1.2
<b>tinana</b>	-0.532	0.421	-1.3	0.24	0.821	0.3
<b>hinengaro</b>	-0.833	0.421	-2.0	0.206	0.821	0.3
<b>wairuatanga</b>	-0.486	0.421	-1.2	-0.868	0.821	-1.1
<b>mauri</b>	-1.223	0.421	-2.9	0.672	0.821	0.8
<b>whenua</b>	-0.915	0.421	-2.2	-0.543	0.821	-0.7
<b>mana</b>	-0.877	0.421	-2.1	0.094	0.821	0.1
<b>whatumanawa</b>	-0.442	0.421	-1.0	-0.414	0.821	-0.5
<b>tikanga Māori</b>	-2.49	0.421	-5.9	6.752	0.821	8.2
<b>tikanga Pākehā</b>	0.065	0.421	0.2	-1.221	0.821	-1.5
<b>te ao tawhito</b>	-1.139	0.421	-2.7	0.569	0.821	0.7
<b>te ao hou</b>	0.351	0.421	0.8	-1.018	0.821	-1.2
<b>total measure</b>	-0.133	0.421	-0.3	-0.624	0.821	-0.8

Some explanation of the reasons for these significantly nonnormal distributions may be gained from the measures of item variability which describe the way in which participants' scores were dispersed. A rating scale should be sensitive to individual differences. In the ideal rating scale, a wide variety of responses will be obtained and all possible alternatives, or scoring options, will be used (Hills, 2000). As a general rule, the standard deviation, or variability of scores around the mean, should be 1.5 or greater for a seven point scale (Hills, 2000). In this case, a thirteen point scale was used and the standard deviation should be at least 3. From the datum presented in Table 8.4, standard deviations were unacceptably low for tinana, wairua, mauri, te ao tawhito and tikanga Māori. With the exception of tikanga Māori, the minimum and maximum values for these items shows the full range of score alternatives were not utilized.

Such findings suggest the kurtosis and/or skewness of mauri, te ao tawhito and tikanga Māori distributions may be due to low levels of variability in participants' responses. Frequency tables can be used to further examine the distribution of raw data as a cumulative percent<sup>122</sup>. From the cumulative

<sup>122</sup> In a normal distribution, at least twenty-five percent of the scores should fall on either side of the mid-score.



frequencies for items with significant kurtosis and/or skewness, it is clear most scores were in uppermost third of the rating scale. Indeed, approximately sixty percent of the respective ratings for whanaungatanga, taha hinengaro, mauri, whenua, mana and te ao tawhito were between nine and twelve. Furthermore, more than eighty percent of the scores for tikanga Māori were in this category.

### ***Reliability analysis***

This research has primarily set out to examine whether waiora can predict the quality of Māori childbirth experience. In order to achieve this goal, it is important to have confidence in the tool which has been used to measure waiora. It is critical that the waiora score obtained from administration of *Hōmai te Waiora ki Ahau* is reliable. Although psychological measurement is never perfect, the reliability of a measure can be assessed directly, through correlation of test-retest scores, or indirectly, through analyzing the sources of error (Graham & Lilly, 1984)<sup>123</sup>. A number of methodologies can, therefore, be used to explore the reliability of *Hōmai te Waiora ki Ahau* as a tool for the measurement of waiora among participants in this study (Graham & Lilly 1984, Hills, 2000, Tabachnick & Fidell 1996). Firstly, the data obtained from administration of this measure can be broadly screened for normality. Secondly, the internal consistency of this measure can be examined in at least two ways<sup>124</sup>. And thirdly, an analysis of variance can be used to explore differences between the items means. All three approaches provide an efficient estimate of reliability based on the sources of error obtained during a single administration of the test (Graham & Lilly, 1984)

As with individual items, values for the mean, median, standard deviation, range, skewness and kurtosis can be used to screen the normality of data for a total, multi-item measure such as *Hōmai te Waiora ki Ahau*. More specifically, the mean for this measure should be around the mid-score of the item rating scale multiplied by the number of items. Deviation too far either side of this value suggests the scale is not very robust (Hills, 2000)<sup>125</sup>. In general, the mean should fall within one standard deviation, or thirty-four percent, of the mid-score (Tabachnick & Fidell, 1996). In this case, the mid-score of the rating scale (six) multiplied by the number of items (twelve) gives a total measure mid-score of

<sup>123</sup> Possible sources of error include the respondent, the administrator, the content, the situation and the timing.

<sup>124</sup> A test is internally consistent if the items tend to intercorrelate.

<sup>125</sup> A mid-score mean suggests the scale is robust because both ends of the rating scale are represented.

seventy-two and thirty-four percent of this, is twenty-four. It would be acceptable, therefore, for the total mean to fall between forty-eight and ninety-six. In effect, it was 95.64 which suggests the robustness of this measure was only borderline acceptable as scores tended to fall towards the higher end of the scale. Furthermore, the standard deviation was relatively small, at 16.98, which shows participants' scores did vary but the measure could clearly have been more sensitive to individual differences. Such findings are supported by the minimum and maximum scores, which ranged from 61 to 125, and draw attention to the way in which scores were largely clustered in the third quartile of the rating scale. Nevertheless, the distribution of scores for this measure did not show signs of significant skewness or kurtosis and there was no disparity between the mean and median. In general, the frequencies for *Hōmai te Waiora ki Ahau* suggest the measure could be more sensitive and robust but the overall distribution of data appeared normal. On this basis, it is reasonable to proceed with the multivariate tests for reliability.

The homogeneity, or internal consistency, of *Hōmai te Waiora ki Ahau* items was assessed in two ways. Firstly, the correlation coefficient between each item and the corrected total score for that item ( $r_{itot}$ ) is a standard measure of internal validity (Hills, 2000)<sup>126</sup>. And secondly, Chronbach's reliability coefficient  $\alpha$  ("alpha") estimates internal validity by measuring the relationship between item sum of variances and total variance for the scale (Graham & Lilly 1984, Hills 2000). In both methodologies, internal consistency is estimated on the basis of average inter-correlations among the items of a scale and reliability is demonstrated when the items inter-correlate (Graham & Lilly 1984, Hills 2000).

The desired  $r_{itot}$  coefficient is determined by sample size. In this study there were thirty-one participants and the critical value for  $r_{itot}$  at  $p < .05$  is .3494. As a general convention, an  $r_{itot} > .7$  indicates an item which may need to be discarded or changed because it is too similar to other components and is not, therefore, making its own contribution to the total score (Hills, 2000). However, an  $r_{itot}$  which is significant, but not too high, indicates an item which not only makes its own contribution to the total score because it measures something that is not captured by other components but is also consistent with the general context of other items

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<sup>126</sup> "r" refers to Pearson's product-moment correlation coefficient and  $r_{itot}$  is the product-moment correlation coefficient between the item (i) and corrected total score for that item (tot).

in the scale. A scale composed largely of internally consistent items is seen to have internal validity (Hills, 2000). The reliability coefficient provides a single indicator of internal consistency for the scale. Ideally, the alpha coefficient should be .7 or above but .6 is acceptable for a pilot study and anything less indicates an unreliable scale (Hills 2000, Tabachnick & Fidell 1996). Chronbach's coefficient  $\alpha$  can be used to check the contribution of each item to the total score. That is, if coefficient  $\alpha$  increases when the item is deleted then it is reasonable to assume the item is not making a significant contribution to the reliability of the scale.

**Table 8.6: *Hōmai te Waiora ki Ahau* by corrected item-total correlations ( $r_{itot}$ ) and Chronbach's coefficient  $\alpha$  if item deleted**

	corrected item-total correlations	$\alpha$ if item deleted
<b>whanaungatanga</b>	.1595	.6511
<b>tinana</b>	.0275	.6654
<b>hinengaro</b>	.5206	.5854
<b>wairuatanga</b>	.2649	.6327
<b>mauri</b>	.1504	.6488
<b>whenua</b>	.4826	.5849
<b>mana</b>	.3406	.6188
<b>whatumanawa</b>	.5077	.5894
<b>tikanga Māori</b>	.3180	.6248
<b>tikanga Pākehā</b>	.3168	.6236
<b>te ao tawhito</b>	.1371	.6501
<b>te ao hou</b>	.2078	.6451

Table 8.6 presents the data obtained from administration of *Hōmai te Waiora ki Ahau* by corrected item-total correlations and coefficient  $\alpha$  if item deleted. With regard to  $r_{itot}$ , none of the items were above .7 and six of the twelve items reached the .3 level of significance, ie: taha hinengaro, whenua, mana, whatumanawa, tikanga Māori and tikanga Pākehā. Furthermore, Chronbach's coefficient  $\alpha$  for the scale was .6486 and this figure would have only improved slightly with the removal of items. Such findings suggest a borderline level of internal consistency although the reliability of this scale was clearly acceptable for a pilot-study.

The final procedure for examining the reliability of *Hōmai te Waiora ki Ahau* considers differences between the means of item scores (Hill 2001, Tabachnick & Fidell 1996). Ideally, a measure needs to be sensitive to individual differences and the responses of one person should be distinct from those of another. A one-way analysis of variance (ANOVA) and Hotelling's T-Squared

allow this hypothesis to be tested. More specifically, both techniques determine the reliability of mean item differences by looking at the variability which is due to people and the variability which is due to the actual test items. A significant finding is good because it suggests the scale is sensitive to individual differences and respondents are not scoring similarly. For ANOVA,  $F_{(30,11)}$  at 9.4559 was significant at  $p > .001$  and by Hotelling's T-squared the  $F_{(11,20)}$  at 4.3069 was also significant at  $p > .001$ . Hence, both measures suggest that the participants' responses were very different from each other and *Hōmai te Waiora ki Ahau* would, therefore, seem to be reliable in this regard.

### **Validity Analysis**

Although reliability is an important attribute, the most critical property of any test is validity (Graham & Lilly, 1984). Validity looks at the content of a measure and, more importantly, whether concepts portrayed within the measure are appropriate and adequately represented. In general, there are four ways in which the validity of a measure is assessed, ie: face validity, content validity, criterion-related validity and construct validity.

It would seem *Hōmai te Waiora ki Ahau* was able to satisfy a number of validity requirements. It is clear, for example, that participants were willing to complete this measure. From the dispersion of scores, it also appears they understood and were able to respond to each item. On this basis, it is reasonable to suggest the measure displayed evidence of face and content validity.

The criterion-related validity of *Hōmai te Waiora ki Ahau* was tested in two ways. More specifically, when participants had completed the twelve items of *Hōmai te Waiora ki Ahau* they were asked to provide an additional rating of their own feelings of waiora. The self-rated variable provided a concurrent criterion for assessing the validity of the aggregate waiora score. That is, if the measure is valid the correlation between self-rated and aggregate waiora scores will be significant. Indeed, the correlation between these variables was highly significant,  $r = .49$ ,  $p < .01$ . The aggregate score clearly predicted participants' own feelings of waiora and the measure can, therefore, demonstrate at least one indicator of concurrent, criterion-related validity. Furthermore, Affectometer 2 provided another concurrent criterion for checking the validity of *Hōmai te Waiora ki Ahau*. In this regard, no evidence of a significant relationship was found between these variables which is good because it suggests waiora (a Māori construct of psychological

wellbeing) is *not* the same as a non-Māori construct of psychological wellbeing (as measured by Affectometer 2).

Construct validity usually refers to the sensitivity of an instrument, or the extent to which it is able to pick up variations in the concept being measured (Graham & Lilly, 1984). Techniques for examining internal consistency and estimating the variance of an instrument provide information on construct validity. The above discussion has already shown that *Hōmai te Waiora ki Ahau* is sensitive to individual differences but the construct validity and internal consistency of this measure could certainly be improved. Strategies for addressing such issues are presented in the discussion.

### **Predictors of participants' childbirth experience**

A correlation coefficient ( $r$ ) describes the relationship between two variables (Graham & Lilly, 1984; Wonnacott & Wonnacott, 1982). It provides information on three important aspects of the relationship between these variables:

- The correlation coefficient measures the direction of the relationship, or whether scores are arranged in the same rank order. In a positive correlation, high scores are paired with high, average with average and low with low whereas in a negative correlation the reverse is true and scores above the mean on one variable tend to be below the mean on the other;
- It also measures the linear relationship between two variables and the correlation coefficient is, therefore, an index of how well one variable can predict the other. More specifically, a perfect correlation (+1.00 or -1.00) suggests all of the variance in one score can be explained by variance in the other. In contrast, a zero correlation indicates no linear relationship, or the variance in one score cannot be explained by variance in the other, and<sup>127</sup>
- The correlation coefficient provides information about the power, or usefulness, of a predictor. The squared coefficient,  $r^2$ , indicates the proportion of variance accounted for in the correlation between two variables<sup>128</sup>.

Furthermore, a correlation coefficient can be computed for any pair of variables, even if neither is normally distributed. For normal distributions, Pearson's formula for parametric correlations is used to calculate the coefficient. And for nonnormal distributions, Spearman's formula for nonparametric correlations calculates the coefficient on the ranks of scores rather than absolute numbers (Graham & Lilly,

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<sup>127</sup> A zero correlation means the variables are not linearly related although there may be a curvilinear relationship.

1984; Wonnacott & Wonnacott, 1982). Typically, both parametric and nonparametric tests are applied. In either case, however, a significant correlation coefficient suggests the degree of linearity would not have occurred by chance and the relationship between variables is significantly different from zero<sup>129</sup>.

This section examines the outcomes of correlation studies to identify which variables were able to predict the quality of participants' childbirth experience<sup>130</sup>. There were five stages of analysis. Primarily, these studies aimed to examine the extent to which waiora was able to predict the quality of childbirth experience. In addition, it was also of interest to see whether experience of waiora and the quality of childbirth experience was in any way influenced by feelings of ethnic identity and/or psychological wellbeing, as measured by Affectometer 2. Fourthly, the correlation studies provided an opportunity to explore the extent to which the prenatal variables, ie: social support, obstetric care, cognitive mediators and coping strategies may have predicted childbirth outcomes. And finally, correlations between and within the perinatal variables were also explored.

### ***Waiora***

Nine of the twelve items in *Hōmai te Waiora ki Ahau* were significant predictors of the waiora score. More specifically, waiora was predicted by whanaungatanga ( $\rho = .39$ ,  $p < .05$ ); hinengaro ( $\rho = .67$ ,  $p < .01$ ); wairua ( $r = .42$ ,  $p < .05$ ); whenua ( $\rho = .66$ ,  $p < .01$ ); mana ( $\rho = .52$ ,  $p < .01$ ); whatumanawa ( $r = .64$ ,  $p < .01$ ); te ao hou ( $\rho = .41$ ,  $p < .05$ ); tikanga Māori ( $\rho = .46$ ,  $p < .01$ ) and tikanga Pākehā ( $\rho = .49$ ,  $p < .01$ ). Taha tinana, mauri and te ao tawhito, therefore, were the only components which did not predict the waiora score. In addition to the waiora score, such findings suggest it would be pertinent to examine the extent to which individual components of *Hōmai te Waiora ki Ahau* may also predict childbirth experience.

Table 8.7 displays the outcomes of correlation studies between *Hōmai te Waiora ki Ahau* items and the prenatal quality of childbirth variables. During pregnancy, it appears waiora was a significant predictor of social support resources and the development of cognitive mediators. More specifically, waiora predicted the amount of korero ( $r = .43$ ,  $p < .05$ ), tautoko ( $r = .41$ ,  $p < .05$ ) and awhi ( $r = .44$ ,  $p < .05$ ) as well as the perception that maternity professionals would have most

<sup>128</sup> The statistical significance of a correlation is partly a function of sample size.

<sup>129</sup> A significant correlation does not necessarily imply a causal relationship.

control over childbirth events ( $r = .38$ ,  $p < .05$ ). A significant negative relationship was also evident between waiora and the expectation that attendance at antenatal classes would help women to have a better birth experience ( $r = -.42$ ,  $p < .05$ ).

**Table 8.7: *Hōmai te Waiora ki Ahau* components and waiora score by significant correlations with prenatal variables<sup>131</sup>**

	whanaungatanga	tinana	hinengaro	waihua	mauri	whenua	mana	whatumanawa	tikanga Māori	tikanga Pākehā	te ao tawhito	te ao hou	waiora score
<b>Prenatal obstetric care</b>													
onset of care		-.401*						.363*					
number of consultations		.422*											
gestation at book-in								.405*					
<b>Social support</b>													
attention		-.381*											
information			.378*		-.374*	.385*							
tinana			.474**			.398*							
korero	.417*		.393*			.402*		.372*					.427*
tautoko			.381*		-.404*	.482**							.414*
awhi			.482**			.426*							.437*
tikanga													
social support score			.428*		-.365*	.449*							
<b>Cognitive mediators</b>													
maternity pr. providers have control									.401*	.450*			.379*
I have control								.456**					
confidence in health								.401*					
can handle the pain					.383*								
I will not need help													
I could have a homebirth													
trust in doctors													
trust in midwives								-.410*					
I will have an ideal birth													
preparation is important			-.436*										
antenatal classes are important				-.411*									
antenatal classes will help			-.512**	-.530**				.501**					-.422*
obstetric care is important													
birth will not be painful													
I will not need pain relief													
do not expect negative outcome	-.582**												
everything will be OK								.423*					
I will be alright								.391*					
baby will be alright								.435*					
<b>Coping strategies</b>													
made changes to my lifestyle		-.636**											
did things to improve the birth					.444*						.359*		
had a birthplan													
completed choice of care													
had strategies to stop fear								-.391*					

significant  $r$  only
  significant  $\rho$  only
  significant  $r$  and  $\rho$

Of the twelve waiora components, it is clear that whatumanawa, hinengaro, mauri and whenua had the most impact on prenatal quality of childbirth variables. In particular, whatumanawa significantly predicted eleven of the thirty-five variables under study. Indeed, whatumanawa was a significant predictor of prenatal obstetric care, both its' onset ( $r = .36$ ,  $p < .05$ ) and gestation at book-in ( $r = .41$ ,  $p < .05$ ); amount of korero ( $r = .37$ ,  $p < .05$ ); perceptions of self control ( $\rho =$

<sup>130</sup> Where  $r$  and  $\rho$  are both significant the highest coefficient is reported.

46,  $p < .01$ ); confidence in personal health ( $\rho = .40$ ,  $p < .05$ ) and the expectation that everything will be OK ( $\rho = .42$ ,  $p < .05$ ); I will be OK ( $\rho = .39$ ,  $p < .05$ ) and my baby will be alright ( $\rho = .44$ ,  $p < .05$ ). Significant inverse relationships were also found between whatumanawa and trust in midwives ( $\rho = -.41$ ,  $p < .05$ ); the expectation that attendance at antenatal classes will help ( $r = -.50$ ,  $p < .01$ ) and the development of strategies to cope with fear ( $\rho = -.39$ ,  $p < .05$ ).

Hinengaro was not only a significant predictor of the social support score ( $r = .43$ ,  $p < .05$ ) as well as the amount of information ( $r = .38$ ,  $p < .05$ ); tinana ( $r = .48$ ,  $p < .01$ ); korero ( $r = .35$ ,  $p < .05$ ); tautoko ( $\rho = .38$ ,  $p < .05$ ) and awhi ( $\rho = .40$ ,  $p < .01$ ) but also had an inverse effect on expectations that preparation was important ( $r = -.44$ ,  $p < .05$ ) and attendance at antenatal classes will help ( $r = -.53$ ,  $p < .01$ ). Whenua also predicted the social support score ( $r = .45$ ,  $p < .05$ ) and five of the seven resources received during pregnancy. In contrast, a significant inverse relationship was evident between mauri and the social support score ( $\rho = -.37$ ,  $p < .05$ ), the amount of information ( $\rho = -.37$ ,  $p < .05$ ) and tautoko ( $\rho = -.40$ ,  $p < .05$ ) but this factor had a positive effect on confidence in personal ability to handle childbirth pain ( $\rho = .38$ ,  $p < .05$ ) and the likelihood that women would do things to help themselves cope ( $\rho = .44$ ,  $p < .01$ ). To a lesser extent, significant linear relationships were evident between wairua, tinana, whanaungatanga, tikanga Māori and tikanga Pākehā and the prenatal quality of childbirth variables. Most notable, is the finding that tinana was negatively related to the onset of prenatal obstetric care ( $r = -.41$ ,  $p < .05$ ), the amount of attention received during pregnancy ( $\rho = -.38$ ,  $p < .05$ ) and the likelihood of changes in personal lifestyle ( $\rho = -.64$ ,  $p < .01$ ).

Table 8.8 displays the outcomes of correlation studies for *Hōmai te Waiora ki Ahau* components and waiora score by the perinatal quality of childbirth variables. In general, waiora was inversely related to the use of pethidine ( $r = -.41$ ,  $p < .05$ ); CTG score ( $\rho = -.37$ ,  $p < .05$ ); CTG by the number of applications ( $r = -.51$ ,  $p < .01$ ); length of stage one labour ( $r = -.36$ ,  $p < .05$ ) and the total length of labour ( $r = -.41$ ,  $p < .05$ ). However, some of the components in this scale displayed evidence of a direct relationship with the perinatal variables. In particular, te ao tawhito was not only negatively related to experience of an

<sup>131</sup> As a general convention, an asterisk indicates the level of statistical significance, \* =  $p < .05$ , \*\* =  $p < .01$  and \*\*\* =  $p < .001$



epidural ( $r = -.47, p < .01$ ) as well as the obstetric technology score less CTG ( $r = -.36, p > .05$ ) but also predicted postpartum perceptions on the quality of labour ( $r = .37, p < .05$ ); satisfaction with care ( $r = .52, p < .01$ ) and feelings of wellbeing ( $r = .39, p < .05$ ). Similarly, wairua was inversely related to the use of pethidine ( $r = -.48, p < .01$ ); forceps ( $\rho = -.41, p < .05$ ); the total length of labour ( $r = -.39, p < .05$ ) and satisfaction with care ( $\rho = -.42, p < .05$ ).

**Table 8.8: *Hōmai te Waiora ki Ahau* components and waiora score by significant correlations with perinatal variables**

	whanaungatanga	tinana	hinengaro	wairua	mauri	whenua	mana	whatumanawa	tikanga Māori	tikanga Pākehā	te ao tawhito	te ao hou	waiora score
<b>Obstetric intervention</b>													
ARM													
prostaglandin													
syntocinon								-.446*					
pethidine			-.416*	-.483**				-.517**					-.410*
epidural											-.474**		
caesarean section													
forceps delivery		-.394*		-.408*									
episiotomy													
CTG													-.367*
CTG: number of times								-.468**					-.506**
CTG: duration													
technology score													
technology score less CTG											-.358*		
<b>Indicators of perinatal health</b>													
infant gestation (LMP)													
infant gestation (scan)												-.506**	
birthweight													
apgar (1 minute)													
apgar (5 minute)													
breastfeeding													
length of labour: stage 1													-.385*
length of labour: stage 2													
length of labour: stage 3		.386*											
total length of labour				-.392*									-.410*
<b>Presence of others at birth</b>													
maternity service providers													
whānau													
<b>Postpartum perceptions</b>													
quality of labour													.366*
quality of delivery	.400*									-.375*			
satisfaction with care				-.424*							.572**		
self-rated wellbeing											.388*		

Whatumanawa also displayed a negative effect on the use of syntocinon ( $r = -.45, p < .05$ ); pethidine ( $r = -.52, p < .01$ ) and CTG ( $r = -.47, p < .01$ ). Furthermore, whanaungatanga predicted the length of stage three labour ( $\rho = .37, p < .05$ ) as well as perceptions on the quality of delivery ( $r = .40, p < .05$ ) and

mauri was a significant predictor of breastfeeding ( $\rho = .50, p < .01$ ). Nevertheless, te ao hou was a negative predictor of infant gestation by scan ( $r = -.51, p < .01$ ) and tikanga Pākehā was inversely related to perceptions on the quality of delivery ( $\rho = -.38, p < .05$ ).

Overall, it is clear that waiora did indeed predict variables associated with the quality of participants' childbirth experience. Furthermore, several components in the waiora measure also predicted the quality of childbirth variables. In terms of respective influence, these components roughly fall into four groups. Firstly, whatumanawa and hinengaro were the most influential predictors. Secondly, wairua, mauri, whenua and te ao tawhito displayed a moderately high level of influence. Thirdly, tinana and whanaungatanga predicted four or five variables each. And, lastly tikanga Pākehā, te ao hou and tikanga Māori seemed to have the least influence. Mana was the only component of *Hōmai te Waiora ki Ahau* which did not predict at least one quality of childbirth variable.

### ***Ethnic Identity***

A number of inter-correlations were found between items in the ethnic identity measure. In particular, positive linear relationships were found between desire for the whenua and not only the tendency to view oneself as Māori ( $r = .40, p < .05$ ), but also perceptions on the importance of Māoritanga ( $\rho = .46, p < .01$ ) and ability to identify iwi ( $\rho = .42, p < .05$ ). An inverse relationship was also evident between desire for the whenua and cultural identity ( $r = -.40, p < .05$ ). Furthermore, willingness to attend wānanga mo ngā wāhine hapū was predicted by participants' self-view ( $r = .39, p < .05$ ).

Table 8.9 displays significant correlations between the indicators of ethnic identity and the quality of childbirth variables. Although ethnic identity did not predict the waiora score, it clearly impacted on components within the waiora measure and several quality of childbirth variables. In particular, self-view predicted hinengaro ( $r = .47, p < .01$ ); whenua ( $r = .48, p < .01$ ); the amount of information received during pregnancy ( $r = .44, p < .05$ ) and the implementation of changes in lifestyle ( $r = .43, p < .05$ ). Self-view also had an inverse effect on taha tinana ( $r = -.40, p < .05$ ). Perceptions on the importance of Māoritanga predicted te ao tawhito ( $\rho = .43, p < .05$ ); tikanga Māori ( $\rho = .43, p < .05$ ); the onset of care ( $\rho = .41, p < .05$ ); gestation at book-in ( $r = .38, p < .05$ ) and whether women did things to improve their birth experience ( $r = .36, p < .05$ ).

**Table 8.9: Indicators of ethnic identity by significant correlations with prenatal and perinatal variables**

	think of self as Māori	Māoritanga is important	can identify iwi	would attend wānanga	want whenua	active stage of cultural identity
<b>Hōmai te Waiora ki Ahau</b>						
whanaungatanga					.452*	
hinengaro	.470**					
taha tinana	-.400*					
wairua						-.597**
whenua	.476**					
te ao tawhito		.429*				
te ao hou			-.375*	-.356*		
tikanga Māori		.430*				
<b>Prenatal obstetric care</b>						
onset of care		.408*				
number of consultations				-.428*		-.394*
gestation at book-in		.381*				
<b>Social support</b>						
information	.440*					
<b>Cognitive strategies</b>						
I will not need help						.393*
do not expect negative outcome					-.485*	
<b>Coping strategies</b>						
changes in lifestyle	.430*			.386*		
did things to improve birth		.357*				
<b>Obstetric interventions</b>						
epidural						-.398*
caesarean delivery			.441*			
length of third stage labour			-.373*			

Ability to identify iwi was positively related to experience of caesarean delivery ( $r = .44$ ,  $p < .05$ ) but negatively related to te ao hou ( $\rho = -.38$ ,  $p < .05$ ) and the length of third stage labour ( $\rho = -.37$ ,  $p < .05$ ). Similarly, willingness to attend wānanga was predicted by the implementation of changes in lifestyle ( $r = .39$ ,  $p < .05$ ) but inversely related to te ao hou ( $\rho = -.36$ ,  $p < .05$ ) and the number of consultations during pregnancy ( $\rho = -.43$ ,  $p < .05$ ). Furthermore, desire for the whenua was predicted by whanaungatanga ( $r = .45$ ,  $p < .05$ ) but inversely related to expectations of a positive outcome ( $\rho = -.49$ ,  $p < .05$ ). Although a positive linear relationship was evident between an active stage of cultural identity and the expectation that help would not be needed ( $\rho = .39$ ,  $p < .05$ ) negative relationships were evident between this factor and wairua ( $\rho = -.60$ ,  $p < .01$ ), the number of consultations ( $\rho = -.39$ ,  $p < .05$ ) and experience of epidural anaesthesia ( $\rho = .40$ ,  $p < .05$ ).

## Affectometer 2

Table 8.10 displays the outcomes of correlation studies between Affectometer 2 and the variables under study. Positive linear relationships were found between Affectometer 2 and three waiora variables, namely taha tinana ( $r = .37$ ,  $p < .05$ ), mauri ( $r = .41$ ,  $p < .05$ ) and whatumanawa ( $r = .40$ ,  $p < .05$ ) and an inverse relationship was evident between Affectometer 2 and the tendency for participants' to view themselves as Māori ( $r = -.37$ ,  $p < .05$ ).

**Table 8.10: Affectometer 2 by significant correlations with *Hōmai te Waiora ki Ahau*, ethnic identity and the quality of childbirth variables**

	Affectometer 2
<b>Hōmai te Waiora ki Ahau</b>	
taha tinana	.367*
mauri	.405*
whatumanawa	.404*
<b>Ethnic identity</b>	
view self as Māori	-.374*
<b>Social support</b>	
information	-.454*
<b>Cognitive mediators</b>	
confidence in health	.462*
baby will be OK	.369*
<b>Coping strategies</b>	
did things to improve birth	.366*
had strategies to cope with fear	-.452*
<b>Obstetric interventions</b>	
syntocinon	-.507**
epidural	-.527**
technology score	-.485**
technology score less CTG	-.474**
<b>Presence of others at birth</b>	
whānau	-.621**
<b>Postpartum perceptions</b>	
quality of labour	.587**
satisfaction with care	.429*

With regard to the quality of childbirth variables, positive correlations were evident between confidence in personal health ( $r = .46$ ,  $p < .01$ ); the expectation that baby will be OK ( $r = .37$ ,  $p < .05$ ); whether women did things to improve their birth experience ( $r = .37$ ,  $p < .05$ ); perceptions on the quality of labour ( $r = .59$ ,  $p < .01$ ) and satisfaction with maternity care ( $r = .50$ ,  $p < .05$ ). Furthermore, negative correlations were found between Affectometer 2 and the amount of information received during pregnancy ( $r = -.45$ ,  $p < .05$ ); the development of strategies to cope with fear ( $r = -.45$ ,  $p < .05$ ); the use of syntocinon ( $r = -.51$ ,  $p < .01$ ); epidural anaesthesia ( $r = -.53$ ,  $p < .01$ ); the obstetric technology score ( $r = -.50$ ,  $p < .01$ ); the technology score less CTG ( $r = -.48$ ,  $p < .01$ ) and the presence of whānau members during childbirth ( $r = .62$ ,  $p < .01$ ).

### ***Prenatal Social Support***

The prenatal social support measure comprised seven items and an overall score was calculated by collapsing the amount of support received from five different sources during pregnancy<sup>132</sup>. The above discussion has shown that waiora alongwith several waiora components, particularly hinengaro and whenua, significantly predicted the receipt of social support resources during pregnancy. Furthermore, the amount of information received was predicted by the tendency for participants' to view themselves as Māori and inversely related to Affectometer 2 scores.

**Table 8.11: Prenatal social support items and overall score by significant correlation studies with the quality of childbirth variables**

	attention	information	tinana	korero	tautoko	awhi	tikanga	social support score
<b>Cognitive mediators</b>								
trust in doctors							.434*	
confidence in ability to handle pain							-.392*	
confident will not need help								-.361*
preparation is important							.414*	
do not expect negative outcome			.466*					
<b>Coping strategies</b>								
birthplan						.417*		.367*
did things to improve birth								
had strategies to stop fear							.405*	
<b>Obstetric interventions</b>								
prostaglandin	-.452*							
pethidine						-.360*		
epidural		.362*						
<b>Indicators of perinatal health</b>								
birthweight			.458**		.369*			
infant apgar score at 1 minute				.496**				
length of third stage labour				.427*	.381*	.521*		
breastfeeding	-.367*	-.412*	-.403*		-.516**	-.417*	-.359*	-.529**
<b>Postpartum perceptions</b>								
self-rated wellbeing			.413*					

Table 8.11 displays the outcomes of correlation studies between prenatal social support and the quality of childbirth variables. It is interesting to note that social support during pregnancy did not seem to influence experience of prenatal obstetric care or the likelihood of social support during childbirth. However,

<sup>132</sup> By way of interest, Chronbach's alpha coefficient for the social support measure was .91 but neither the ANOVA nor Hotelling's T-squared were significant which suggests participants tended to give similar responses.



significant correlations were evident between prenatal social support and a number of quality of childbirth variables. In particular, the tendency to breastfeed was predicted by six of the seven items in this measure and in all cases the relationship was negative. More specifically, inverse relationships were found between breastfeeding and attention ( $\rho = -.37$ ,  $p < .05$ ); information ( $\rho = -.41$ ,  $p < .05$ ); tinana ( $\rho = -.40$ ,  $p < .05$ ); tautoko ( $\rho = -.52$ ,  $p < .01$ ); awhi ( $r = .42$ ,  $p < .05$ ); tikanga ( $r = -.36$ ,  $p < .05$ ) and the total score ( $\rho = -.53$ ,  $p < .05$ ). Furthermore, the length of third stage labour was predicted by the amount of korero ( $r = .42$ ,  $p < .05$ ); tautoko ( $\rho = .38$ ,  $p < .05$ ) and awhi ( $r = .42$ ,  $p < .05$ ). Infant birthweight was also predicted by the amount of tinana ( $\rho = .458$ ,  $p < .01$ ) and tautoko ( $r = .37$ ,  $p < .05$ ).

In general, tikanga seemed to be the most influential predictor. In addition to its influence on breastfeeding, tikanga predicted trust in doctors ( $\rho = .43$ ,  $p < .05$ ); the expectation that preparation is important ( $\rho = .41$ ,  $p < .05$ ); the likelihood that women would do things to improve their birth experience ( $r = .41$ ,  $p < .05$ ) and was inversely related to confidence in ability to handle pain ( $\rho = -.38$ ,  $p < .05$ ). To a lesser extent, awhi and tinana were also influential. Awhi predicted whether women would develop a birthplan ( $r = .42$ ,  $p < .05$ ) and the use of pethidine ( $r = -.36$ ,  $p < .05$ ). Similarly, tinana predicted expectations of a negative outcome ( $r = .47$ ,  $p < .05$ ) and feelings of postpartum wellbeing ( $r = .41$ ,  $p < .05$ ). Furthermore, information predicted epidural anaesthesia ( $r = .36$ ,  $p < .05$ ); attention was negatively related to the use of prostaglandin ( $r = -.45$ ,  $p < .05$ ) and korero predicted one minute apgar scores ( $\rho = .50$ ,  $p < .01$ ).

### **Cognitive Mediators**

This research collected data on four prenatal cognitive processes which have been shown to mediate the quality of childbirth experience, ie: trust, confidence, control and expectations. Each of these variables contained between two and thirteen items. Among participants in this study, the above discussion has shown that the waiora score predicted feelings of control and the expectations associated with antenatal class attendance. Several items within the waiora measure also predicted the development of prenatal cognitive mediators. In particular, whatumanawa predicted almost half of the seventeen items contained within these four variables. Furthermore, the above discussion has shown that items in the ethnic identity and social support measures also predicted feelings of trust,

confidence and expectations regarding the importance of preparation and the likelihood of a positive outcome. Nevertheless, it is of interest to further examine not only the relationships between cognitive processes but also the manner in which these mediators may have influenced the experience of childbirth among participants in this study. Tables 8.12 to 8.14 display the outcomes of correlation studies between the cognitive mediators and the quality of childbirth variables.

**Table 8.12: Cognitive mediators by significant inter-correlations**

	confidence to homebirth	preparation is important	obstetric care is important	antenatal classes will help	birth is not painful	I will not need pain relief	everything will be alright	I will be OK	baby will be OK
trust in midwives	-.387*	.495**	.358*		-.418*				
trust in doctors			.386*						
confidence in health			-.367*				.361*		
I can handle the pain						.423*	.536**	.508**	.649**
I will not need help	.365*								
ideal birth			.571**						
obstetric care is important	-.369*	.426*							
antenatal classes are important	-.494**		.375*	.573**					
antenatal classes will help	-.358*	.426*						-.457**	-.467**
birth will not be painful							.424*		
I will not need pain relief				-.374*			.472**	.536**	.753**
everything will be alright								.920**	.804**
I will be OK									.873**

Table 8.12 presents significant inter-correlations between the cognitive mediators. It is clear there were a number of inter-correlations between these variables. In particular, positive linear relationships were found between the perception that obstetric care is important and trust in midwives ( $r = .36$ ,  $p < .05$ ); trust in doctors ( $r = .39$ ,  $p < .05$ ); expectations of an ideal birth ( $r = .57$ ,  $p < .01$ ) as well as the belief that preparation ( $r = .43$ ,  $p < .05$ ) and antenatal classes are important ( $r = .38$ ,  $p < .05$ ). In addition, the importance of obstetric care was negatively related to confidence in ability to homebirth ( $r = -.37$ ,  $p < .05$ ) as well as confidence in personal health ( $r = -.37$ ,  $p < .05$ ). Furthermore, confidence in personal ability to handle the pain of childbirth predicted expectations about the need for pain relief ( $r = .42$ ,  $p < .05$ ) and the pain items, in general, were significant predictors of expectations associated with the likelihood of a positive outcome. For example, positive linear relationships were evident between the expectation that everything will be alright and not only confidence in health ( $\rho = .36$ ,  $p < .05$ ) but

also ability to handle the pain ( $r = .54, p < .01$ ); birth will not be painful ( $rho = .42, p < .05$ ) and I will not need pain relief ( $r = .47, p < .01$ ). Trust in midwives not only predicted perceptions regarding the importance of obstetric care and preparation ( $r = .50, p < .01$ ) but was negatively related to confidence in ability to homebirth ( $rho = -.39, p < .05$ ) and the expectation that birth would be not be painful ( $r = -.42, p < .05$ ).

**Table 8.13: Cognitive mediators: trust, confidence and control by significant correlations with the quality of childbirth variables**

	trust in midwives	trust in doctors	confidence in health	I will not need help	I can handle the pain	control to maternity professional
<b>Prenatal obstetric care</b>						
onset of care		-.425*				-.514**
number of consultations						.438*
gestation at book-in						-.448*
<b>Coping strategies</b>						
did things to improve the birth	.382*		.528**	-.465**		
had strategies to stop fear	.375*				-.386*	
<b>Obstetric intervention</b>						
ARM						-.468**
prostaglandin					-.466**	
pethidine			-.395*			
epidural				-.363*		
caesarean section						.405*
CTG						-.405*
CTG: duration					-.431*	
technology score					-.465**	
technology score less CTG					-.430*	
<b>Presence of others at birth</b>						
maternity service providers						.460**
whānau		-.464**	-.435*			

Table 8.13 displays cognitive mediators by significant correlations between trust, confidence and control for the quality of childbirth variables. In general, beliefs about control and confidence in ability to handle pain were the most influential items. Positive linear relationships were evident between the belief that control was located in maternity professionals and the number of consultations during pregnancy ( $r = .48, p < .05$ ); the number of maternity professionals present during childbirth ( $r = .46, p < .01$ ) and caesarean delivery ( $r = .41, p < .05$ ) and this item was negatively related to the onset of prenatal obstetric care ( $r = -.51, p < .01$ );



gestation at book-in ( $r = -.45, p < .05$ ); artificial rupture of the membranes ( $\rho = -.47, p < .01$ ) and the use of CTG ( $\rho = -.41, p < .05$ ). Similarly, confidence in own ability to handle the pain of childbirth was negatively related to the development of strategies to cope with fear ( $r = -.39, p < .05$ ); prostaglandin ( $\rho = -.47, p < .01$ ); the duration of CTG ( $\rho = -.43, p < .01$ ); the technology score ( $\rho = -.47, p < .01$ ) and the technology score less CTG ( $\rho = -.43, p < .05$ ). In addition, confidence in personal health predicted whether women would do things to improve their birth experience ( $r = .53, p < .01$ ) but was inversely related to the use of pethidine ( $\rho = -.40, p < .05$ ) as well as the number of whānau members present during labour and delivery ( $\rho = -.44, p < .05$ ). Trust in midwives also predicted whether women would do things to help themselves have a better birth experience ( $r = .38, p < .05$ ) and the development of strategies to cope with fear ( $r = .38, p < .05$ ) whereas trust in doctors was negatively related to the onset of care ( $r = -.43, p < .05$ ) and the number of whānau members present at birth ( $\rho = -.47, p < .01$ ).

Table 8.14 displays cognitive mediators by significant correlations between expectations and the quality of childbirth variables. Clearly, the expectation that pain relief would not be needed was the most influential predictor. A positive linear relationship was found between this item and postpartum perceptions on the overall quality of childbirth experience ( $\rho = .38, p < .05$ ) but the expectation that pain relief would not be needed was inversely related to the development of strategies to cope with fear ( $\rho = -.38, p < .05$ ) as well as the use of pethidine ( $r = -.40, p < .05$ ); epidural anaesthesia ( $\rho = .48, p < .05$ ); forceps delivery ( $r = -.54, p < .01$ ); episiotomy ( $r = -.38, p < .05$ ); CTG duration ( $r = -.41, p < .05$ ); the technology score ( $r = -.51, p < .01$ ) and the technology score less CTG ( $r = -.53, p < .01$ ). Similarly, the expectation of a positive outcome for baby predicted gestation at book-in ( $r = .43, p < .05$ ) but was inversely related to the development of strategies to cope with fear ( $r = .49, p < .05$ ); forceps delivery ( $r = -.40, p < .05$ ); episiotomy ( $r = -.38, p < .05$ ); the technology score ( $r = -.41, p < .05$ ) and the technology score less CTG ( $r = -.39, p < .05$ ). Indeed, the positive outcome items predicted a number of the quality of childbirth variables. For example, the expectation that everything will be alright predicted ARM ( $r = .37, p < .05$ ); the development of strategies to stop fear ( $\rho = -.47, p < .05$ ) and infant gestation by LMP ( $\rho = -.42, p < .05$ ). And finally, the expectation of an ideal birth predicted

length of labour ( $r = .50$ ,  $p < .05$ ); postpartum wellbeing ( $r = .50$ ,  $p < .05$ ) and the likelihood of delivery by caesarean section ( $r = -.59$ ,  $p < .01$ ).

**Table 8.14: Cognitive mediators: expectations by significant correlations with quality of childbirth variables**

	ideal birth	obstetric care is important	antenatal care is important	antenatal classes will help	birth will not be painful	I will not need pain relief	do not expect negative outcome	everything will be alright	I will be OK	baby will be OK
<b>Prenatal obstetric care</b>										
gestation at book-in										.428*
<b>Coping strategies</b>										
choice of care				-.379*						
had strategies to stop fear			.382*		-.384*	-.378*		-.470*	-.357*	-.490**
<b>Obstetric intervention</b>										
ARM							.368*		.380*	
pethidine						-.397*				
epidural						-.480**				
caesarean section	-.587**	-.380*								
forceps delivery						-.535**				.389*
episiotomy						-.382*				.384*
CTG: duration						-.411*				
technology score						-.509**				-.410*
technology score less CTG						-.529**				-.391*
<b>Indicators of perinatal health</b>										
infant gestation (LMP)							.608**	-.416*		
length of labour: stage 3	.498*									
<b>Presence of others at birth</b>										
whānau							-.473*			
<b>Postpartum perceptions</b>										
quality overall						.374*				
satisfaction with care			.393*							
self-rated wellbeing	.497*									

### **Prenatal Coping Strategies**

This section looks at the evidence of linear relationships between coping strategies during pregnancy, both cognitive and behavioural, and the quality of childbirth variables. It, therefore, includes discussion of the items used to measure the adequacy of prenatal obstetric care. As common sense would predict, the gestation at which care commenced was inversely related to the number of consultations during pregnancy ( $r = .47$ ,  $p < .01$ ) and gestation at book-in was predicted by onset of care ( $r = .72$ ,  $p < .01$ ) but negatively related to the number of consultations ( $r = -.54$ ,  $p < .01$ ). Table 8.15 presents the outcomes of correlation studies between coping strategies and the quality of childbirth variables. Two of the three indicators for prenatal obstetric care predicted a number of outcomes but gestation at book-in was not significantly related to any of the variables in this analysis. Onset of care was inversely related to the use of prostaglandin ( $r = -$

.42,  $p < .05$ ), infant gestation by scan ( $\rho = -.46$ ,  $p < .05$ ) and the number of providers present during childbirth ( $\rho = -.43$ ,  $p < .05$ ). Similarly, positive linear relationships were evident between the number of consultations during pregnancy and the use of epidural anaesthesia ( $\rho = .48$ ,  $p < .01$ ); the technology score less CTG ( $\rho = .40$ ,  $p < .05$ ) and the number of providers ( $\rho = .39$ ,  $p < .05$ ) but this factor was inversely related to artificial rupture of the membranes ( $r = -.42$ ,  $p < .05$ ); the use of CTG ( $r = -.49$ ,  $p < .01$ ) and infant gestation by LMP ( $r = -.46$ ,  $p < .05$ ).

**Table 8.15: Coping strategies by significant correlations with the quality of childbirth variables**

	onset of care	number of consultations	changes in lifestyle	did things to improve birth experience	choice of care	strategies to cope with fear
<b>Obstetric intervention</b>						
ARM		-.420*				
prostaglandin	-.415*					
syntocinon						.361*
epidural		.484**				
CTG		-.486**				
technology score less CTG		.399*				
<b>Indicators of perinatal health</b>						
infant gestation (LMP)		-.459*	.414*			.498**
infant gestation (scan)	-.459*					
<b>Presence of others at birth</b>						
providers	-.430*	.386*				
whānau					.400*	
<b>Postpartum perceptions</b>						
self-rated wellbeing				.457**	.470**	

The development of other coping strategies during pregnancy, had a largely beneficial influence on childbirth outcome. In particular, infant gestation by LMP was predicted by changes in personal lifestyle ( $r = .41$ ,  $p < .05$ ) and strategies to cope with fear ( $\rho = .40$ ,  $p < .01$ ). The perception of postpartum wellbeing was predicted by choice of care plans ( $r = .47$ ,  $p < .01$ ) and doing things to improve birth ( $\rho = .46$ ,  $p < .01$ ). Choice of care also predicted the number of whānau members present during childbirth ( $\rho = .40$ ,  $p < .05$ ). However, a positive linear relationship was evident between the development of strategies to cope with fear and the use of syntocinon during labour ( $r = .36$ ,  $p < .05$ ).

## Perinatal Outcomes

This section considers the evidence of linear relationships between and within the perinatal variables.

Table 8.16 displays significant inter-correlations between obstetric intervention techniques. This table also presents significant correlations between obstetric technology and the indicators of perinatal health.

**Table 8.16: Perinatal outcomes by significant inter-correlations between obstetric technology and perinatal outcome**

	ARM	prostaglandin	syntocinon	pethidine	epidural	caesarean delivery	forceps	CTG	CTG: times	CTG: duration
<b>Obstetric intervention</b>										
ARM				.407*	.392*	-.555**				
prostaglandin			.498**						.698**	.641**
pethidine	.407*								.446*	.500*
syntocinon		.498*			.599**				.736**	.780**
epidural		.392*	.599**			.385*	.385*		.563**	.657**
episiotomy							.558**			
forceps					.385*					
caesarean delivery	-.555**				.385*			-.358*		
technology score		.576*	.660**	.416*	.900**	.421*	.506**		.688*	.756**
technology score less CTG		.539*	.636**	.387*	.914**	.480**	.497**		.583**	.644**
<b>Indicators of perinatal health</b>										
length of labour: total		.471**	.520**	.418*	.439*			.426*	.822**	.708**
gestation by LMP	.408*									
infant apgar at five minutes									-.398*	

In general, the technology score was predicted by use of prostaglandin ( $\rho = .57$ ,  $p < .05$ ); syntocinon ( $r = .66$ ,  $p < .01$ ); pethidine ( $\rho = .42$ ,  $p < .05$ ); epidural ( $r = .90$ ,  $p < .01$ ); caesarean delivery ( $r = .42$ ,  $p < .05$ ); forceps ( $r = .51$ ,  $p < .01$ ); the number of times CTG was administered ( $\rho = .67$ ,  $p < .01$ ) and the total duration of CTG during labour ( $\rho = .76$ ,  $p < .01$ ). A similar pattern was evident for the technology score less CTG. In order of frequency, however, positive linear relationships were evident between the use of epidural and artificial rupture of the membranes ( $r = .40$ ,  $p < .05$ ) prostaglandin ( $\rho = .39$ ,  $p < .05$ ); syntocinon ( $\rho = .60$ ,  $p < .01$ ); caesarean delivery ( $\rho = .39$ ,  $p < .05$ ); delivery by forceps ( $\rho = .39$ ,  $p < .05$ ); CTG times ( $\rho = .56$ ,  $p < .01$ ) and the duration of CTG ( $\rho = .66$ ,  $p < .01$ ). CTG readings and duration formed comparable linear relationships. For example, the number of readings was predicted by use of prostaglandin ( $\rho = .70$ ,  $p < .01$ ); pethidine ( $r = .45$ ,  $p < .05$ ) and syntocinon ( $\rho = .74$ ,  $p < .01$ ). In addition, positive linear relationship were evident between the use of prostaglandin and syntocinon ( $\rho = .50$ ,  $p < .01$ ) as well as an ARM and

pethidine ( $\rho = .41$ ,  $p > .05$ ). Furthermore, the total length of labour was predicted by the use of prostaglandin ( $\rho = .48$ ,  $p < .01$ ); syntocinon ( $\rho = .52$ ,  $p < .01$ ); pethidine ( $r = .42$ ,  $p < .05$ ); epidural ( $\rho = .44$ ,  $p < .05$ ), CTG ( $\rho = .43$ ,  $p < .05$ ); the number of CTG readings ( $\rho = .82$ ,  $p < .01$ ) and the duration of CTG in labour ( $\rho = .71$ ,  $p < .01$ ). A negative linear relationship was also evident between the number of CTG readings during labour and five minute apgar scores ( $\rho = .40$ ,  $p < .05$ ).

**Table 8.17: Perinatal variables by significant correlations**

	providers present	whānau present	quality of labour	quality of delivery	satisfaction with care	self-rated wellbeing
<b>Obstetric intervention</b>						
prostaglandin	.502**	-.418*				
pethidine		.450*				
syntocinon			-.469**			
epidural	.699**		-.591**	-.470**	-.500**	-.387*
forceps				-.590**		
caesarean delivery	.656**		-.388*	-.377*		-.617**
CTG times	.529**					
CTG: duration			-.571**		-.392*	
technology score	.713**		-.629**	-.522**	-.420*	-.476**
technology score less CTG	.748**		-.649**	-.507**	-.420*	-.488**
<b>Indicators of perinatal health</b>						
length of labour: total	.432*			.384*		
infant birthweight						.368*
infant apgar at 5 minutes					.517**	
<b>Presence of others at birth</b>						
providers			-.409*	-.403*		-.422*
<b>Postpartum perceptions</b>						
quality of labour	-.409*	-.373*		.607**	.663**	.373*
quality of delivery	-.403*		.607**		.396*	
satisfaction with care			.663**	.396*		.360*
self-rated wellbeing	-.422*		.373*		.360*	

Table 8.17 presents the outcomes of correlation studies between all of the perinatal variables. In general, significant linear relationships were clearly evident between the presence of providers, obstetric intervention and postpartum perceptions. For example, positive linear relationships were found between the number of providers present and the use of prostaglandin ( $\rho = .50$ ,  $p < .01$ );

epidural anaesthesia ( $\rho = .70$ ,  $p < .01$ ); caesarean delivery ( $r = .66$ ,  $p < .01$ ); the number of CTG readings ( $\rho = .53$ ,  $p < .01$ ); the obstetric technology score ( $r = .71$ ,  $p < .01$ ) and the technology score less CTG ( $r = .75$ ,  $p < .01$ ). In addition, the presence of providers predicted the total length of labour ( $\rho = .43$ ,  $p < .05$ ) but displayed an inverse relationship with participants' perceptions on the quality of labour ( $r = -.41$ ,  $p < .05$ ); the quality of delivery ( $r = -.40$ ,  $p < .05$ ) and feelings of postpartum wellbeing ( $r = .42$ ,  $p < .05$ ). The number of whānau members present also had a negative impact on the quality of labour ( $r = .34$ ,  $p < .05$ ) and the use of pethidine ( $\rho = .42$ ,  $p < .05$ ) but this factor predicted the use of pethidine ( $\rho = .45$ ,  $p < .05$ ). Experience of obstetric interventions clearly had a negative impact on participants postpartum perceptions. In particular, significant inverse relationships were evident between perceptions on the quality of labour and experience of syntocinon ( $\rho = -.47$ ,  $p < .01$ ); epidural anaesthesia ( $\rho = -.59$ ,  $p < .01$ ); caesarean delivery ( $r = -.39$ ,  $p < .05$ ); CTG duration ( $\rho = -.57$ ,  $p < .01$ ); the obstetric technology score ( $\rho = -.63$ ,  $p < .01$ ) and the technology score less CTG ( $r = -.65$ ,  $p < .01$ ).

To a lesser extent, obstetric technology also predicted the quality of delivery. For example, significant inverse relationships were evident between perceptions on the quality of delivery and epidural anaesthesia ( $r = -.47$ ,  $p < .01$ ); forceps delivery ( $r = -.59$ ,  $p < .01$ ); caesarean delivery ( $r = -.38$ ,  $p < .05$ ); the technology score ( $r = -.52$ ,  $p < .01$ ) and the technology score less CTG ( $r = -.51$ ,  $p < .01$ ). Moreover, a positive linear relationship was found between the quality of delivery and the total length of labour ( $\rho = .38$ ,  $p < .05$ ). Negative linear relationships were also evident between satisfaction with maternity care and experience of epidural anaesthesia ( $r = -.50$ ,  $p < .01$ ); CTG duration ( $r = -.39$ ,  $p < .05$ ); the technology score ( $\rho = -.42$ ,  $p < .05$ ) and the technology score less CTG ( $r = .42$ ,  $p < .05$ ). Infant apgar at five minutes also predicted satisfaction with care ( $r = .52$ ,  $p < .01$ ). Similarly, negative linear relationships were also evident between feelings of postpartum wellbeing and forceps delivery ( $r = -.39$ ,  $p < .05$ ); caesarean delivery ( $r = -.62$ ,  $p < .05$ ); the technology score ( $r = -.48$ ,  $p < .01$ ) and technology score less CTG ( $\rho = -.49$ ,  $p < .01$ ). A positive linear relationship was also found between postpartum wellbeing and infant birthweight ( $r = .37$ ,  $p < .05$ ). And finally, positive linear relationships were clearly evident between participants' postpartum perceptions. Indeed, perceptions on the quality of labour predicted the



quality of delivery ( $\rho = .61, p < .01$ ); satisfaction with care ( $\rho = .66, p < .01$ ) and feelings of postpartum wellbeing ( $\rho = .37, p < .05$ ). Furthermore, the quality of delivery predicted satisfaction with care ( $\rho = .40, p < .05$ ) and this factor, in turn, predicted postpartum wellbeing ( $\rho = .36, p < .05$ ).

# **Chapter Nine**

## **Whakatau Whānau**

### *Discussion*

This thesis set out to achieve four main objectives. Firstly, it aimed to improve understanding of the manner in which Māori women develop and/or use psychological variables known to be associated with the quality of childbirth experience. Secondly, it aimed to examine the relationship between these variables and the quality of childbirth experience among participants in this study. Thirdly, it aimed to develop and pilot-test an instrument for the measurement of psychological wellbeing among Māori. And fourthly, it aimed to test whether *waiora*, or a Māori construct of psychological wellbeing, was able to predict the quality of Māori childbirth experience.

The following discussion examines the extent to which these goals have been achieved. The first section consolidates the knowledge gained about each variable under study and considers whether these variables were able to predict the quality of participants' childbirth experience. The second section looks at the efficacy of *Hōmai te Waiora ki Ahau* as a tool for the measurement of psychological wellbeing among Māori and the various ways in which it could be improved. In conclusion, the final section discusses the implications of this thesis for not only the delivery of Māori maternity services but also the development and implementation of Māori health research methodologies.

#### **Predictors of Māori childbirth experience**

In essence, this research has revolved around the basic idea that experience of psychological wellbeing during pregnancy is good for the health of women and their babies. It has embraced a large body of overseas literature which has shown that indicators of psychological wellbeing can predict a range of biopsychosocial birth outcomes. Within New Zealand, this research set out to learn about the use of such variables among Māori women and their role as predictors of childbirth experience. Above all, it has explored whether *waiora* is also a predictor of Māori childbirth experience. The following section summarizes the main findings for each of the variables measured in this study. It discusses the relationship between



variables and looks at the manner in which experience may have been mediated by feelings of ethnic identity and/or psychological wellbeing, as measured by Affectometer 2. In closing this section of the discussion, a model for conceptualizing the predictors of Māori childbirth experience is presented.

### ***Waiora***

Participants, in general, displayed a high level of waiora and the vast majority clearly felt that the Māori components of *Hōmai te Waiora ki Ahau* contributed more to their sense of waiora than the non-Māori components, tikanga Pākehā and te ao hou. Relatively speaking, tikanga Māori and te ao tawhito were the strongest sources of waiora but issues associated with whānau, land affiliation and acknowledgement of the spiritual realm were also important. Given that participants were hapū, it is interesting to find this group of women did not consider the elements of self most influenced by pregnancy, that is, their bodies, emotions, personal status and mental attributes - to be particularly strong sources of waiora. Perhaps pregnancy led participants to feel that whatumanawa, taha tinana, mana and hinengaro contributed less to their feelings of wellbeing or perhaps participants had not had the opportunity to experience the waiora potentially available from these components.

In this small pilot-study, waiora was able to predict a number of the quality of childbirth variables, namely the amount of social support resources during pregnancy, prenatal cognitive processes, the use of pethidine, CTG and length of labour. However, the following points are of interest:

- In predicting the quality of childbirth variables, some components of the waiora measure seemed better than, or at least as good as, the aggregate waiora score. Most notable is the sheer number of items which displayed evidence of a significant relationship with whatumanawa. This emotions-related component of the waiora measure was able to predict items in most of the main variable groups. Mauri, hinengaro and wairua were also influential in this regard;
- In general, the relationships between variables made sense. For example, taha tinana and whatumanawa were the best predictors of coping strategies during pregnancy including attendance for prenatal obstetric care. Women with a strong sense of whatumanawa were more likely to feel positive, confident and in control and, therefore, developed fewer strategies to cope with fear. Spiritual and emotional components mainly predicted the amount of social support received during pregnancy as well as the use of pain-relief during labour. Mauri was the only predictor

of confidence in ability to handle birthpain and whether women would breastfeed. And women who felt tikanga Pākehā was a strong source of waiora gave maternity professionals more control over childbirth events but were less satisfied with the quality of delivery; and

- The direction of relationships between variables was not always in accordance with perceived beneficence. For example, whatumanawa was associated with delayed attendance for prenatal obstetric care, less trust in midwives and the view that antenatal education was not important. In addition, women who felt good about their tinana were less likely to implement changes in their lifestyle and women with a strong sense of mauri received less social support during pregnancy.

Evidence of a positive relationship between ethnic identity and feelings of waiora was found. For example, women who viewed themselves as Māori were more likely to say that hinengaro and whenua were strong sources of waiora. Similarly, the perception that Māoritanga was important was associated with the waiora gained from te ao tawhito and tikanga Māori.

Indeed, in some cases the relationship between waiora and the quality of childbirth variables may have been mediated by feelings of ethnic identity. In particular, women who said their wairua was a strong source of waiora tended to identify with a passive, rather than active, stage of cultural identity development and were more likely to think that antenatal education would be of benefit and more satisfied with the quality of perinatal maternity care. However, women in the low wairua group received less pain-relief, fewer forceps deliveries and had a shorter stage three labour. In this regard, it would seem an active stage of cultural identity development, and its associated resistance of the status quo, may have had a beneficial effect on biophysical aspects of perinatal outcome.

In a similar manner, women who felt that Māoritanga was important were likely to view te ao tawhito as a strong source of waiora and these women not only had less epidural anaesthesia as well as lower obstetric technology scores but also tended to give higher ratings for quality of delivery, satisfaction with care and feelings of postpartum wellbeing. There is also evidence to suggest the expression of Māori ethnic identity in childbirth related matters may have been mediated by feelings of waiora. For example, whanaungatanga predicted participants' desire for the whenua. In addition, women who regarded te ao hou as a strong source of waiora were less likely to know their iwi, less likely to attend wananga mo ngā

wāhine hāpū and by scan dates, at least, these women tended to deliver at earlier gestations.

Significant positive relationships were found between Affectometer scores and three waiora components. It seems feelings of psychological wellbeing may have mediated the waiora participants associated with taha tinana, mauri and whatumanawa, or vice-versa. A linear relationship between an affect-based measure of psychological wellbeing and the emotions-related component of waiora can certainly be expected.

Of most interest, however, is the evidence which suggests an inter-relationship between waiora, ethnic identity and psychological wellbeing. For example, participants with high Affectometer scores were less likely to view themselves as Māori and more likely to say their taha tinana was a strong source of waiora. Furthermore, participants who felt taha tinana was a strong source of waiora were less likely to view themselves as Māori and this perception was negatively related to feelings of psychological wellbeing.

All-in-all, these findings provide a framework for thinking about the way in which waiora may predict the quality of Māori childbirth experience. At this stage, however, such outcomes are preliminary as the amount of variance accounted for in the relationships between waiora and the quality of childbirth variables was relatively small. Given that the correlation coefficients ranged between .36 and .64, it is clear that little more than forty percent of the variance was explained by any of the predictors in this analysis. Two methodologies may help to increase the amount of variance explained in these relationship. Variance, for example, is clearly a function of sample size and the implementation of a larger study may, therefore, improve the amount of variance explained in relationships between the waiora and quality of childbirth variables. However, the amount of variance explained is more likely to increase if reliability of the tool for measuring waiora could be improved. Strategies to achieve this latter goal are discussed below.

### ***Prenatal social support***

In contrast with the findings of Goodwin (1996) whānau, rather than friends, were the main providers of tangible support for Māori women during pregnancy. Most participants coped by themselves or with help from one family member. As Goodwin (1996) found, partners provided little in the way of tangible

support during pregnancy. The majority of participants also had access to three or more health professionals during pregnancy. Indeed, participants may have been disadvantaged by the involvement of too many maternity service providers which has been linked to the fragmentation of care and a so-called lack of continuity in the delivery of services (Coopers & Lybrand 1993, Maternity Services Consumer Council 1993, Oakley & Houd 1990; Tew 1998).

With regard to the quantity of resources provided by each source during pregnancy, whānau outranked all other sources and whānau-based sources provided more support than professionals. In general, whānau-based sources were seen to provide more than enough of all resources whereas professionals did not provide enough. Such findings seemed to contradict the above suggestion that most women coped with little support from their whānau during pregnancy. This outcome may reflect the inappropriateness of rating scales to measure whānau support<sup>133</sup>. Within professional sources, doctors were seen to provide the most resources although they mostly provided attention and information. However, the seven participants who attended antenatal classes felt this system provided more than enough of all resources. It is interesting to note that most of these women attended a special series of antenatal classes for adolescent Māori facilitated by Te Roopu Hauora, rather than the hospital midwives. This suggests wananga mō ngā wāhine hapū may be an effective medium for the delivery of antenatal education among adolescent Māori.

Of the resources measured, participants mostly received attention and information with smaller amounts of korero, tautoko, awhi and tikanga. Unfortunately, the resource participants received least of during pregnancy was taha tinana which, in this context, would include all forms of physical contact and mirimiri, such as foot and back massage, stretching, exercise and general attention to their bodies.

As a predictor of childbirth experience, the social support score was relatively ineffectual. However, various components of the social support measure predicted aspects associated with the development of prenatal cognitive mediators and coping strategies as well as the use of obstetric interventions, indicators of perinatal health and participants' postpartum perceptions. In respective order, the

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<sup>133</sup> In response to open-ended questions, this research as well as that of Goodwin (1996) has shown that Māori women are quite willing to discuss issues associated with the amount and quality of whānau support.

amount of tikanga, awhi, tinana and tautoko seemed most influential and these resources were better predictors than attention or information. In accordance with previous studies, such findings suggest certain resources may be more beneficial than others during pregnancy (Dunkel-Schetter et al, 1996). Furthermore, the birth outcomes most responsive to change were the indicators of perinatal health, particularly propensity to breastfeed but also the length of third stage labour and infant birthweight. The relationship to length of labour is difficult to interpret but social support during pregnancy had a clearly beneficial effect on infant birthweight (Oakley et al, 1990)<sup>134</sup>. The prenatal social support measures had a consistently negative effect on the likelihood of breastfeeding but this outcome is also difficult to interpret. It is possible, for example, that the amount of prenatal social support is related to the expectation that whānau will take an active part in neonatal infant care which would be easier if infants were not breastfed. In general, the amount of variance accounted for by the prenatal social support predictors was comparable, or better than, that found in other studies (Collins et al 1993; Dunkel-Schetter et al 1987; Oakley 1992; Quine et al, 1993).

Little evidence of a relationship between social support and ethnic identity or psychological wellbeing was found but both variables seemed to mediate the amount of information received during pregnancy. That is, participants who received the most information tended to not only view themselves as Māori but also displayed low levels of psychological wellbeing. As doctors were the main providers of information during pregnancy, this finding may be indicative of a treatment for participants who were seen to more at risk than others<sup>135</sup>.

### ***Cognitive Mediators***

Participants' cognitions were clearly influenced by parity, experience of past complications and satisfaction with prenatal care. In general, nulliparae were less confident, had less trust in maternity professionals, anticipated more control over childbirth events, were more likely to expect a negative outcome and placed greater importance on obstetric care. Similarly, women with experience of previous complications expected less control and displayed lower levels of trust and confidence but were more likely to expect a positive outcome. Although

<sup>134</sup> All but one participant in this study received an epidural injection during third stage labour.

<sup>135</sup> The suggestion here is that doctors may have perceived participants who viewed themselves as Māori and/or displayed higher levels of negative affect to be more at risk.

satisfaction with prenatal care had little effect on feelings of trust, control or confidence, less satisfied women were more likely to have positive expectations.

Furthermore, numerous inter-correlations were found between and within the prenatal cognitions measured in this study. This concurs with the findings of others and certainly suggests a chain of reciprocal interactions may be involved in the development and use of prenatal cognitive processes (Allen 1998; Lowe 1989; Slade et al 2000; Quine et al 1993). In this study, several findings seem noteworthy. First of all, participants with a high degree of trust in midwives were more likely to think that childbirth would be painful. Pain perceptions were clearly related and had a significant impact on the development of positive expectations. Significant relationships were found between the belief that everything would be okay and participants' expectations of a positive outcome for themselves and their baby. Trust in maternity professionals was linked to perceptions on the importance of care and women who were low on both of these variables were more likely to feel confident about their ability to homebirth. There was no evidence to suggest a relationship between control perceptions and feelings of trust, confidence or positive expectations.

## Trust

Although midwives were trusted more than doctors, participants invested a moderate degree of trust in maternity professionals and almost a fifth of the women in this study expressed little or no trust in their service providers. As a predictor of childbirth experience, trust in midwives seemed to have a beneficial influence on the use of coping strategies during pregnancy. Women who trusted their doctors were more likely to attend for prenatal obstetric care and tended to have fewer whānau members present during delivery. No evidence of a direct relationship was found between trust in maternity professionals and feelings of ethnic identity or psychological wellbeing.

## Confidence

Participants were most confident about their health and ability to cope with birthpain but less confident about their ability to homebirth or give birth without help. As others have shown, this study suggests confidence was an important predictor of childbirth experience (Lowe 1987, 1989; Slade et al 1993). Women who were confident about their health tended to do things to help themselves have a better birth experience, had fewer epidurals and had fewer whānau members

present during delivery. Not surprisingly, confidence in personal health was related to feelings of psychological wellbeing. In contrast, women who felt confident about their ability to give birth without help tended to develop fewer coping strategies and were more likely to give birth by caesarean delivery. The relationship between these variables may have been mediated by cultural identity as women who felt confident about their ability to give birth without help were more likely to be in an active stage of identity development. Although women who felt confident about their ability to handle birthpain developed fewer strategies to cope with fear, such confidence had a clearly beneficial influence on the use of prostaglandin, CTG and obstetric technology scores.

### Control

Roughly a third of the women in this study felt professionals would have most control over childbirth events whereas a third gave themselves most control. The remainder felt control would be shared between themselves and their whānau. Midwives were given more control than partners or doctors. Although perceptions of self control did not predict childbirth experience, the view that maternity professionals would have control was not necessarily beneficial. Indeed, women who felt maternity professionals would have control tended to delay the onset of prenatal obstetric care as well as procedures for booking-in, were more likely to experience caesarean section delivery and had more maternity professionals present during delivery. On the positive side, women who located control in maternity professionals had more consultations for prenatal obstetric care and were less likely to experience ARM or CTG techniques in labour. There was no evidence of a direct relationship between locus of control and feelings of ethnic identity or psychological wellbeing.

### Expectations

Participants held largely positive expectations during pregnancy but the level of optimism differed for each measure. Most women felt preparation was important but were less sure about the role of obstetric care and did not feel that antenatal class attendance would help them to have a better childbirth experience. Participants were quite ambivalent about their expectations of an ideal birth and many felt this would not be possible in a hospital environment. Although participants expected childbirth to be painful, most felt able to cope with the pain and did not anticipate the need for pain relief.

The outcomes of this study clearly support the notion that prenatal expectations can predict the quality of childbirth variables (Slade et al, 1993; Slade et al, 2000). In particular, women who expected an ideal birth were less likely to deliver by caesarean and more likely to report feelings of postpartum wellbeing. Furthermore, expectations regarding the importance of care predicted the use of prenatal coping strategies as well as feelings of postpartum satisfaction. The findings for expectations of a positive outcome were not clear-cut but seemed to make sense within the context of childbirth events. For example, women who expected a positive outcome delayed the gestation at which they booked-in, developed fewer strategies to cope with fear and had fewer whānau members present during childbirth. Perhaps expectations of a positive outcome led women to believe they did not need such strategies. Although women with positive expectations were more likely to have an ARM and delivered at earlier gestations they also experienced fewer forceps deliveries and episiotomies as well as lower technology scores. In this case, it seems expectations of a positive outcome may have a favourable effect of the use of obstetric interventions. All in all, however, the expectation that pain relief would not be needed was most beneficial. This variable not only reduced experience of most obstetric interventions but also enhanced postpartum perceptions on the quality of labour and delivery.

An element of evidence suggests participants expectations may have been influenced by feelings of psychological wellbeing and ethnic identity. In particular, women with high Affectometer scores were more likely to expect a positive outcome for their baby and women who expected a negative outcome were more likely to want the whenua.

### ***Prenatal coping strategies***

Most women delayed the onset of care, had an inadequate number of consultations and booked in at later gestations than recommended. However, three quarters of the participants in this study met at least one criteria for adequate prenatal obstetric care and the vast majority saw maternity service providers at least four times during pregnancy. With regard to the content of care, it seems participants received more than enough of some screening tests but not enough of others. In addition to prenatal obstetric care, most women did other things to help them cope with pregnancy and childbirth. For example, most implemented



changes in their lifestyle as well as choice of care plans and almost half developed strategies to cope with fear.

As a predictor of childbirth events, prenatal obstetric care had more influence than other coping strategies but attendance for care was not always beneficial. Women who commenced care early in pregnancy were less likely to be induced with prostaglandin but tended to deliver at earlier gestations and had a greater number of maternity service providers involved with labour and delivery. Similarly, women who had more consultations for prenatal obstetric care were less likely to receive an ARM or CTG during labour but had more epidurals, higher obstetric technology scores, delivered at earlier gestations and were attended by a greater number of providers during childbirth. In general, the development and/or use of other coping strategies during pregnancy had a favourable influence on childbirth outcome. In particular, women who implemented changes in their lifestyle or developed strategies to cope with fear were more likely to deliver at later gestations. Furthermore, women who did things to improve their birth experience or developed choice of care plans reported higher levels of postpartum wellbeing. A positive correlation was also found between choice of care plans and the number of whānau members present during labour and delivery.

Ethnic identity clearly had more influence on the use of prenatal coping strategies than feelings of psychological wellbeing but the effect was not always in the direction of perceived beneficence. For example, women who felt that Māoritanga was important tended to delay the onset of care and the gestation of book-in but were more likely to do other things to improve their birth experience. Similarly, women in an active stage of cultural identity development as well as those who said they would participate in wananga made fewer attendances for prenatal obstetric care. In contrast, women with high Affectometer scores were more likely to do things to improve their birth experience but developed fewer strategies to cope with fear. Perhaps positive affect was, itself, a strategy to cope with fear.

### ***Birth Outcomes***

This research yielded a number of interesting birth outcomes. On average, for example, the length of established labour, among participants in this study, was considerably longer than the expected norm (Farquhar & Jamieson, 1994). Furthermore, many participants felt that their medical files had under-reported the

actual length of labour and parous, rather than non-parous, women were more likely to labour longer. The vast majority of birth experiences were characterised by ARM and CTG procedures but roughly a third of the women under study also received prostaglandin, syntocinon, pethidine and/or an epidural. Among participants in this study, the use of induction techniques was more than thirty times the proportion for Māori nationally at this time (New Zealand Health Information Service, 1994). In addition, the number of caesarean sections almost doubled the proportion for Māori women elsewhere during this period (Johnson et al, 1995; New Zealand Health Information Service, 1994). And, in comparison with British women, almost twice the number of participants in this study fell into a high obstetric technology score group (Oakley & Rajan, 1990). On a more positive note, the proportion of pre-term deliveries and low birthweight infants was lower the national average (Farquhar & Jamieson, 1994). However, this research showed that the method for calculating gestational age had considerable influence on the identification of at risk infants and the subsequent delivery of infant clinical care. Collectively, such findings suggest these aspects of Māori childbirth experience are in urgent need of further study.

With regard to the presence of others during labour and childbirth participants were, generally, supported by two whānau members and three maternity service providers. As Goodwin (1996) found, whānau members were more likely to provide support during childbirth than during pregnancy. Almost half of the women in this study had between three and seven whānau members present during childbirth. The majority of mothers breastfed but slightly more than a quarter of the infants born to women in this study were bottle fed from the moment of birth. Participants, in general, were happy with the quality of their childbirth experience although perceptions on the quality of labour were less favourable than those for delivery. Most participants were highly satisfied with the care received labour and delivery but a third were not satisfied and half of the women under study recalled at least one negative aspect of their experience.

Numerous inter-correlations were found between the use of obstetric technologies during labour and such findings demonstrated clear support for the idea that use of one obstetric intervention generally leads to a cascade of interventions (Feldman & Hurst 1987, Inch 1994, Kitzinger and Davis, 1978; Oakley & Houd, 1990; Tew 1998). For example, an ARM predicted the use

pethidine and epidural techniques for pain relief whereas women induced with prostaglandin were more likely to have syntocinon as well as an epidural. Foetal monitoring techniques, both the number of applications and duration, were predicted by the use of pethidine, epidural, prostaglandin and syntocinon. Obstetric technology scores were predicted by all interventions, except ARM, and eighty-five percent of the variance in obstetric technology scores was explained by the use of an epidural. Women who had longer labours were more likely to experience prostaglandin, syntocinon, pethidine, epidural anaesthesia and CTG but the direction of causality is not clear.

Not surprisingly, women who experienced obstetric interventions were attended by a greater number of maternity professionals. Furthermore, obstetric interventions, along with the number of maternity professionals, had a negative influence on maternal quality perceptions as well as their feelings of postpartum wellbeing. It is not clear whether the presence of whānau members had a beneficial influence on the quality of participants' childbirth experience. Women with a greater number of whānau members present tended to have less prostaglandin but more pethidine and perceptions on the quality of labour were lower. In this context, perhaps the quality of support provided by whānau, rather than the number of members present, would have been a more appropriate measure (Dunkel-Schetter et al, 1996).

Maternal postpartum perceptions were partly determined by the indicators of perinatal health. Infant birthweight, for example, predicted feelings of postpartum wellbeing and five minute apgar scores predicted satisfaction with care. In general, however, the quality of labour predicted the quality of delivery, satisfaction with care and feeling of postpartum wellbeing. Furthermore, a relationship was evident between satisfaction with care and feelings of postpartum wellbeing.

Participants' birth outcomes may have been mediated by feelings of psychological wellbeing and ethnic identity. In particular, women with high Affectometer scores had fewer whānau members present, experienced less syntocinon and epidural analgesia, had lower technology scores and were more likely to report a high quality labour as well as feelings of satisfaction with care. As already mentioned, women in an active phase of cultural identity development were less likely to have an epidural.

### ***A preliminary model***

Among participants in this pilot-study, both prenatal and perinatal processes predicted the quality of childbirth experience. To varying degrees, birth outcomes were predicted by prenatal social support, feelings of trust, control and confidence, positive expectations and the use of coping strategies. The waiora score and several components within the waiora measure also predicted a number of birth outcomes. Furthermore, it seems feelings of ethnic identity and psychological wellbeing had an influence on not only the experience of waiora, but also the development of prenatal processes and perinatal outcomes. Within the perinatal variables, postpartum perceptions were mainly predicted by experience of obstetric technology but the presence of others and indicators of infant health were also important. In summary, therefore, this research has demonstrated evidence of a causal relationship between prenatal psychosocial processes and perinatal outcome.

**Figure 9.1: A preliminary model of psychosocial variables which predict the quality of Māori childbirth experience**

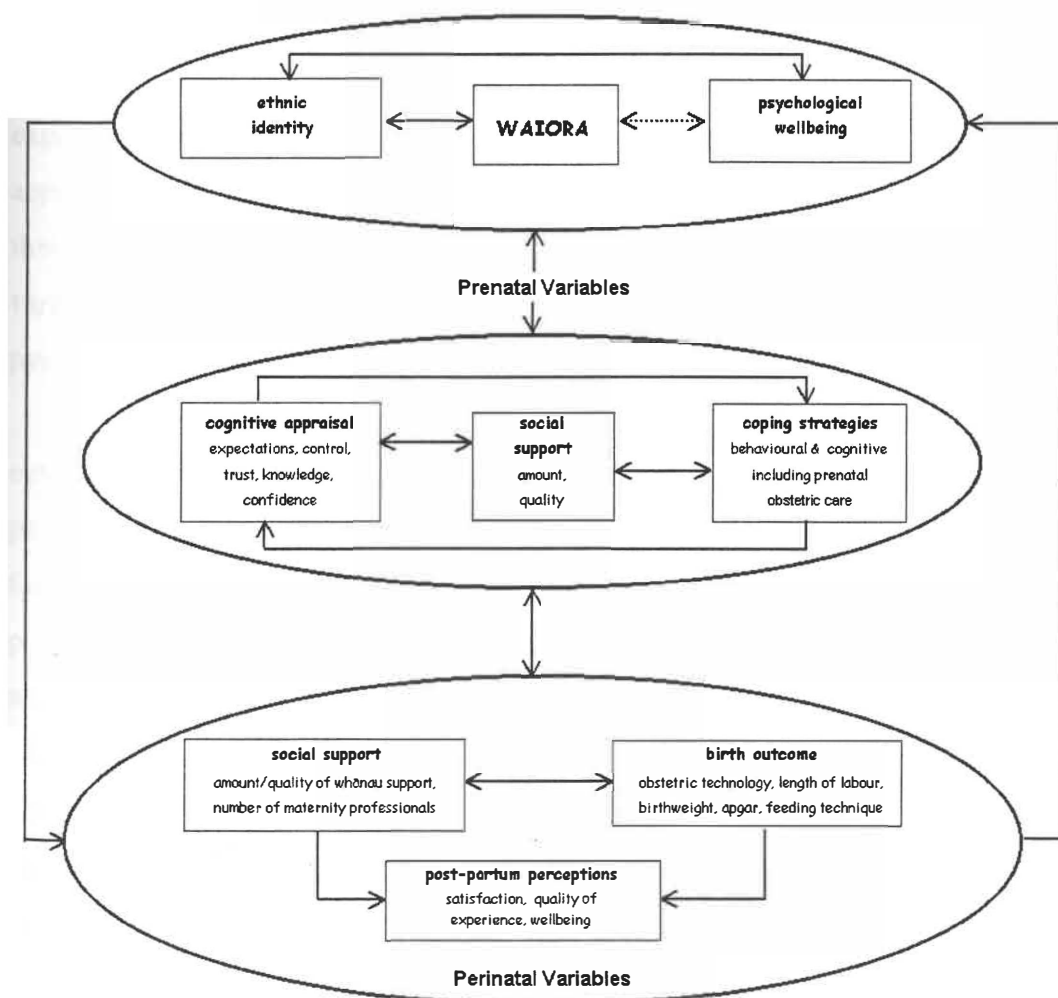


Figure 9.1 presents a schematic illustration of the relationships between prenatal and perinatal variables in this study. This model provides a preliminary framework for conceptualizing the psychosocial predictors of Māori childbirth experience. The model suggests the likelihood of reciprocal causal relationships between feelings of waiora, ethnic identity and psychological wellbeing. Such relationships interact with, and influence, the development of cognitive processes, social support and coping strategies during pregnancy. As predictors of childbirth outcome, the prenatal variables have direct and indirect effects. Collectively, the prenatal variables are able to predict a range of birth outcomes, notably, the presence of others (social support), the use of obstetric technology, various indicators of infant health, maternal perceptions on the quality of childbirth experience, satisfaction with care and feelings of postpartum wellbeing. Within the perinatal variables, a reciprocal relationship is evident between the presence of others and birth outcomes but both variables have a direct effect on maternal postpartum perceptions. Furthermore, this model suggests experience of perinatal outcomes will influence the development of psychosocial processes during a subsequent pregnancy. In particular, this thesis has shown that parity and experience of previous complications influenced the development of cognitive appraisal processes during the pregnancy under study. It is suggested, therefore, that perinatal outcomes are not only predicted by a range of prenatal psychosocial variables but also have the capacity to mediate the development of postpartum psychosocial processes.

In addition, the model suggests waiora is able to predict perinatal outcomes indirectly, through association with the development of other psychosocial processes during pregnancy, and directly, through direct effects on, for example, the use of obstetric technology, indicators of perinatal health and postpartum perceptions. The dotted line between waiora and psychological wellbeing reflects the particular association between Affectometer and whatumanawa, the emotions-related component of *Hōmai te Waiora ki Ahau*. As a predictor of childbirth outcome, this indicates the likelihood that whatumanawa has the potential to be as good as an affect-based measure of psychological wellbeing.

Internationally, the results of this research support a number of theoretical positions and specific issues for the study of Māori childbirth experience have been raised. Irrespective of biomedical factors, this research has shown that biopsychosocial aspects of childbirth outcome can be mediated by prenatal psychosocial processes (Dunkel-Schetter et al, 1996; Green et al, 1990; Inch, 1994; Kitzinger, 1991; Lowe, 1989; Oakley, 1993; Quine et al, 1993; Rutter et al, 1993; Slade et al, 1993; Slade et al, 2000). Although the amount of social support predicted various birth outcomes, this research concurs with the general idea that some resources may be more beneficial than others and the quality of support may be a better predictor than quantity (Dunkel-Schetter et al, 1996; Oakley, 1993). Among ngā wāhine hapū Māori, little is available to describe the quality of whānau support or the types of resources provided during pregnancy and childbirth (Goodwin, 1996; Houkamau, 2000).

In general, this research supports the work of social cognition theorists who suggest the development of coping strategies and health care behaviours may be determined by inter-related cognitive processes including perceptions about beneficial consequences and the importance of care (Bandura, 1986, 1991 & 1992; Fishbein & Ajzen 1975; Janz & Becker 1984; Heller & Swindle 1983; Kessler et al, 1985; Madden et al, 1992; Reading, 1983). However, emotion was an important predictor of the health care behaviours and social cognition theory has recently been criticized for the lack of attention to this dimension (Slade et al, 2000; van der Plight & de Vries 1998). Furthermore, it is interesting to note that pain perceptions, positive expectations and feelings of control or confidence had more effect on health behaviours than cognitions on beneficial consequences and/or the importance of care (Green et al 1990; Lowe 1989; Melzack 1984; Slade et al 1993). In this context, positive expectations and pain perceptions seemed most beneficial and an understanding of factors which facilitate the development of such cognitions among Māori during pregnancy would seem to warrant further study.

Although not strictly a theoretical position, this research lends considerable support for the view that experience of obstetric interventions has a cumulatively negative effect on the quality of maternal postpartum perceptions including satisfaction with care and feelings of wellbeing (Allen, 1998; Monk, 1996; Oakley & Rajan, 1990). Evidence of a relationship between perinatal

outcomes and longterm development of maternal cognitions was also found (Black-Olien, 1993; Thune-Larson & Moller, 1988).

Above all, however, this research has provided preliminary evidence to suggest that *waiora* may be among the group of psychosocial variables which have the capacity to predict the quality of childbirth experience. Among Māori, it seems *waiora* may be a psychological resource that can mediate experience of social support, cognitive processes, coping strategies and a range of perinatal outcomes. With regard to the delivery of Māori maternity services, such findings suggest the development of strategies which foster feelings of *waiora* will have a beneficial effect on the quality of Māori childbirth experience.

*Waiora* was clearly linked to feelings of ethnic identity and the manner in which these variables influence Māori childbirth requires further clarification. At this point, however, it is of interest to note that *te ao tawhito* and *tikanga* Māori were the strongest sources of *waiora* among participants in this study and these variables displayed evidence of a direct relationship to attitudes regarding the importance of *Māoritanga*. Within Aotearoa, such findings support the general idea that access to *te ao Māori* resources is linked to the development of Māori ethnic identity and both factors are important components of Māori psychological wellbeing (Durie, 2001).

A number of authors have suggested it is inappropriate to adopt a one size fits all approach in the development of Māori maternity services (Ellis 1998, Ratima et al 1994). Nevertheless, the vast majority of participants in this small pilot study felt that knowledge of *Māoritanga* was important, affiliated with an active stage of Māori identity development and wished to participate in *wānanga mo ngā wāhine hapū*. Among Hauraki Māori, at least, such findings suggest the development of maternity services which facilitate knowledge of *te ao Māori* may be well received. Given that access to *te ao Māori* resources is not only likely to foster Māori ethnic identity and feelings of *waiora* but may also have a beneficial influence on Māori childbirth outcomes, the weight of evidence supports the need to review the way in which Māori maternity services are delivered nationally. Such findings challenge Māori maternity service providers to develop innovative strategies and clearly pave the way for establishment of *te ao Māori* childbirth resources.

## **Strategies to improve *Hōmai te Waiora ki Ahau***

In its present form, the reliability and validity of *Hōmai te Waiora ki Ahau* was statistically acceptable for this small pilot-study. However, several of the items in this measure showed significant signs of irregular distribution and/or low variability. Within the context of this research topic, it is reasonable to expect the significance of correlations between waiora and the quality of childbirth variables will improve if such discrepancies are addressed. More specifically, statisticians have shown that the correlation coefficient tends to be lower when scores in one or both variables of the equation display evidence of error or homogeneity (Graham & Lilly 1984, Tabachnick & Fidell 1996). In other words, the significance of a correlation coefficient will generally be higher and more powerful when scores have regular distributions and respondents utilize the full range of alternatives available<sup>136</sup>. With regard to the reliability of *Hōmai te Waiora ki Ahau*, the robustness and internal validity of this measure will also improve if each item has a normal distribution and respondents scores are evenly dispersed. In this way, the efficacy of *Hōmai te Waiora ki Ahau*, as a tool for measuring a Māori construct of psychological wellbeing, would be more acceptable.

Several strategies may help to improve the normality of the components in *Hōmai te Waiora ki Ahau*. In the first instance it would seem important to further test the construct validity of items which show irregular distributions and/or low variability. There are various ways in which this could be achieved. In their present form, the items could be administered to different groups of people, such as non-pregnant women or men, to see whether score frequencies were normal for some groups but not others. If so, it would be reasonable to conclude the item has less construct validity among particular groups of people. In the same group of people, a test-retest methodology could be applied to examine changes in score frequencies over time, or measure the effects of a different environment or administrator. The use of these techniques may help to identify conditions under which particular items have, or do not have, construct validity.

Alternatively, strategies to try and improve the construct validity of unacceptable items could be implemented. Given that illustrations are used to

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<sup>136</sup> Homogeneity or low variability results from scores being clustered too closely together which, in turn, suggests respondents did not utilize the full range of scores available.



portray the conceptual meanings of *Hōmai te Waiora ki Ahau* components, it would seem sensible to establish procedures which allow the construct validity of these illustrations to be tested across a range of situations. Perhaps, for example, each illustration or component of the waiora measure could be the subject-matter of focus group discussions. The goals of such discussions would simply be to examine the various meanings associated with each concept but the outcomes of this process would form the basis for new or additional illustrations.

In view of the finding that pilot-study participants tended to score towards the upper end of the range on a number of items and/or did not utilize the full range of alternatives on others, it would seem pertinent to look at the way in which scores are recorded. Perhaps a five-point rating scale would be more appropriate or, in this context, an open-ended question followed by a rating may be most effective.

Along the way, it would be important to test the reliability of *Hōmai te Waiora ki Ahau* in order to identify changes in standard indicators, such as the corrected total score for each item, Chronbach's reliability coefficient  $\alpha$  and differences between the means of item scores. However, the acid test of internal consistency, within this measure, would be a factor analysis (Hills, 2000). This procedure would test whether *Hōmai te Waiora ki Ahau* was multi-, or uni-dimensional. That is, whether the scale is measuring one dimension or a number of discrete factors. In this case, the aim is a uni-dimensional measure as all of the items in this scale contribute to the overall sense of waiora<sup>137</sup>. A factor analysis will identify items which may need further amendment. To meet the requirements for this procedure, there should be at least ten respondents for each item. In this case, therefore, a minimum of 120 respondents would be needed to conduct a factor analysis on *Hōmai te Waiora ki Ahau* items.

## **Research Implications and Future Directions**

Since collection of the data for this thesis, New Zealand's maternity system has been radically reformed. Such reform has coincided with new policy directions and developments in knowledge that have addressed a number of important issues. An understanding of this material highlights current themes in

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<sup>137</sup> For this reason, there would be a reluctance to discard any of the waiora components and strategies to improve the construct validity of items in this measure would be preferred.

the delivery of maternity services and provides a context for thinking about contemporary Māori childbirth issues.

In July 1996, the four Regional Health Authorities (RHA) introduced a new set of service specifications for the provision of primary maternity care under Section 51 of the 1993 Health and Disability Services Act (Joint Regional Health Authority Section 51 Maternity Team, 1996). It is clear this reform was driven by number of objectives. In conjunction with other initiatives, however, the amendments to this Act introduced a range of strategies which aimed to improve the quality of care and the quality of data collection procedures.

### ***Strategies to improve the quality of care***

Women are now required to register with a Lead Maternity Carer (LMC), either a midwife, general practitioner, obstetrician or hospital team, who carries responsibility for all aspects of education and care up to six weeks postpartum. To facilitate the administration of this system, the method of payment for primary maternity services changed from an overall fee to payment for modules and/or single episodes of care. The LMC is responsible for co-ordination of secondary support services and has to abide by specific criteria for specialist consultation. In 1996, the Code of Health and Disability Services Consumers' Rights also became law (Health & Disability Commission, 2001). For health consumers, this Code not only endorses the right to services of an appropriate and effective standard but also acknowledges the right to make an informed choice and give informed consent.

Among maternity professionals, reaction to the reforms was mixed and evidence of resistance led the RHAs to make further amendments to the Act in 1998 (Barber, 1995a, 1995b, 1995c; Geyde, 1995; Health Funding Authority, 2000; New Zealand Herald, 1995; Sutherland, 1995; Ferguson, 1995). For consumers, however, the reforms promised continuity of care, midwife autonomy, support for homebirth and efficacy of care (Coopers & Lybrand, 1993; Maternity Services Consumer Council, 1993). For the Government, they held hope of reduced expenditure (Denny, 1996; Shipley, 1996). And for Māori, section 3.1.2.3 of the amendment notice stated:

“Services to Māori will be provided in a way that is consistent with the principles of the Treaty of Waitangi and the Crown’s objectives for Māori health and take account of the checklist He Taura Tieke<sup>138</sup>. Providers should recognise the status of Māori as tangata whenua and the status of Māori women within the context of their cultural values, belief and practices. Opportunities for whānau participation should be provided and encouraged which will result in better outcomes for Māori women and their babies. Providers should encourage opportunities to allow Māori participation in maternity service delivery through mechanisms such as training initiatives and joint ventures” (Central Regional Health Authority 1996, pg 6).

Prior to the implementation of the reforms, however, concerns expressed by the Māori Working Group appointed to advise the Joint RHA team were not addressed (Māori Working Group, 1996). In particular, the Working Group felt existing literature lacked sufficient detail for comment on the implications of change to the structure of maternity services for Māori and were concerned that they had not had enough time to clarify how the amendments would benefit Māori.

### ***Strategies to improve procedures for data collection***

The Section 51 amendments implemented a range of strategies which aimed to improve the collection of maternity data and establish procedures for monitoring the efficacy of care. LMCs, for example, are obliged to collect a wide range of previously unavailable statistics such as the outcomes of specialist referral during pregnancy and the duration of labour. Pregnant women and their newborn babies are also given a unique identification number which allows their data to be linked to that of Well Child schedules for monitoring and screening purposes. The establishment of a perinatal database as well as random administration audits and user satisfaction surveys were envisaged.

It is clear that a greater quantity of maternity data is now collected which, in principal, should have improved our capacity to monitor the efficacy of care. However, introduction of the Section 51 strategies coincided with new policy directions in other data collection agencies which have made it difficult to make the most of this capacity. In July 1995, for example, New Zealand adopted the Australian version of the International Classification of Diseases (ICD-9-CM-A)

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<sup>138</sup> He Taura Tieke is a three-part framework for describing the effectiveness of Māori health services (Cunningham, 1996). The key elements are clinical competence, structural and system responsiveness and consumer satisfaction.

along with Australian coding standards which led to fundamental changes in the procedures for reporting and classifying national health data (New Zealand Health Information Service, 1997). Then, in September 1995, the Government introduced a new system for coding Māori ethnicity (Statistics New Zealand, 1996). The new system is based on ethnic self-identification rather than biological inheritance, or the degree of Māori blood. In general, the move to self-identification procedures is positive for Māori (Durie 1998, Kilgour & Keefe 1992). In terms of our capacity to monitor the efficacy of maternity services, however, such changes represented the start of a new time series for ethnicity and maternity-related health data. In effect, therefore, post-1995 data is not comparable with that obtained in earlier years and analysts are unable to identify trends.

### ***Implications for Māori maternity service delivery***

Durie (2001) has suggested the key to Māori health advancement lies in the successful implementation of Mauri Ora strategies in all areas of public service delivery. The Mauri Ora framework “equates good health with active participation, strong communities and an appropriate mix of clinical and cultural skills” (Durie, 2001, pg 275). The framework recommends four strategies which aim to foster autonomy and self-determination, socio-economic advancement, cultural affirmation and service responsiveness. Philosophically, the position is holistic and cognizant of the fact that health services alone cannot rectify the health problems of Māori. Nevertheless, it is clear that health services play an important role in the achievement of Māori health development goals and a number of expected outcomes have been identified (Durie, 2001). The Mauri Ora framework provides a useful paradigm for examining themes which have had prominence in the delivery of maternity services for Māori and locating the contribution of this study.

Table 9.1 displays the main outcomes expected from implementation of Mauri Ora strategies in health services. Against such outcomes, it can be seen considerable effort, within delivery of maternity services for Māori, has been invested in the development of strategies which aim to foster autonomy and self-determination, socio-economic advancement and service responsiveness. Indeed, the main focus has been on identifying issues associated with access to maternity services, lifestyle choices and disparities in standards of health (Adair et al, 1999; Bruce, 1998; Daldy & MacKay, 2000; Dharmalingam, 2000; Dharmalingam et al,

1997; Goodwin, 1996; Guilliland, 1998; Health Funding Authority, 1999a, 1999b, 1999c, 2000; Hillcoat-Nalletamby et al, 1998; Mackay, 1999; Ministry of Health, 1997, 1998a, 1999a, 1999b, 1999c, 2000; National Health Committee, 1999a, 1999b; Pairman, 1998; Pool et al, 1999; Turley & McNicholas, 2000).

**Table 9.1: Outcomes expected from implementation of Mauri Ora strategies in the delivery of health services for Māori**

Mauri Ora strategies	Expected outcomes
autonomy & self determination	effective health promotion, strong communities, whānau development, Māori purchaser and provider networks
socio-economic advancement	access to services, access to information, lifestyle choices, elimination of disparities in standards of health
cultural affirmation	secure cultural identity (access to te ao Māori resources), cultural and communicative skills
service responsiveness	minimal barriers to care, culturally relevant health services, Māori health services, adequate funding arrangements

Since implementation of the maternity reforms, for example, a number of studies have shown that consumers tend to be highly satisfied with the quality of maternity care and are more likely to choose an independent midwife as their LMC (Adair et al, 1999; Health Funding Authority, 1999a; National Health Committee, 1999b; Pairman, 1998). However, women also tend to receive less care, are less satisfied with postnatal care, experience difficulty accessing the LMC of choice and are more likely to be charged a fee for maternity services (Adair et al, 1999; Health Funding Authority, 1999a; National Health Committee, 1999b). Furthermore, there is evidence of inadequate information provision, inequities in the delivery of services, LMC preference for least care cases, competition between maternity professionals and increasing expenditure (Daldy & MacKay, 2000; Health Funding Authority 1999a, 1999c, 2000; MacKay 1999; National Health Committee 1999b; van Leeuwen 2000). By perinatal mortality, it appears the safety of childbirth has not reduced but intervention rates suggest otherwise (Guilliland, 1998; Health Funding Authority, 2000; National Health Committee, 1999). During 1996-1998, the proportion of deliveries by caesarean section, induction, vacuum extraction and epidural anaesthesia increased and may

still be on the rise (Daldy & MacKay 2000, Forsyth 1999, Health Funding Authority, 1999b; Johnston, 1999; Ministry of Health, 1998a).

Within this body of literature, there is little which helps to clarify the position of Māori. It seems, however, that Māori tend to delay registration with an LMC, experience more difficulty accessing the LMC of choice, have fewer antenatal and postnatal consultations, are twice as likely to smoke during pregnancy and are not receiving services that meet their cultural needs (Health Funding Authority, 2000; National Health Committee, 1999b). Although Māori may have fewer caesarean section and induced deliveries, such findings are not conclusive as intervention rates vary considerably between hospitals and by the type of LMC (Guilliland, 1998; Health Funding Authority, 1999b; Ministry of Health, 1999c, New Zealand Health Information Service, 2000). Māori preterm and low birthweight rates continue to be excessive (Health Funding Authority, 1999b). Furthermore, Māori women and Māori midwives have expressed a clear preference for whānau-based maternity care and services that are more responsive to Māori (National Health Committee, 1999b).

Within the maternity sector, a number of strategies have aimed to foster autonomy, self-determination and service responsiveness for Māori. In the first instance, support for the implementation of culturally safe nursing and midwifery curriculae has become increasingly evident (Ramsden, 2000). Amidst an international shortage of midwives, efforts to train and retain Māori midwives have been very successful. During the two year period 1998-2000, the number of registered Māori midwives more than trebled, from 68 to 235, and by 1999, roughly ten percent of the midwives active in this country were of Māori ethnicity (Nursing Council of New Zealand, 2000; personal communication, Marion McLaughlan, Midwifery Adviser, Nursing Council of New Zealand on 3 April 2001). In recent years, Ngā Maia o Aotearoa me te Wai Pounamu has gained recognition as an umbrella group and national voice for Māori midwives (Health Funding Authority, 2000). In an attempt to minimise barriers to care and improve access to Māori providers of pregnancy and parenting information, a Whānau Ora maternity support service has been launched with, at least, twenty-three providers nationally (Health Funding Authority, 2000)<sup>139</sup>. (Health Funding Authority, 2000).

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<sup>139</sup> This service is delivered by culturally safe community health workers who are funded to promote and facilitate access to health services for Māori women with high needs during the maternity period.

Such initiatives are part and parcel of a general drive towards Māori health workforce development (Durie, 1998).

Improvements in the analysis of maternity data will clearly inform debate on the achievement of outcomes expected from the implementation of strategies for socio-economic advancement and service responsiveness (Health Funding Authority, 2000; National Health Committee, 1999b). At present, for example, there are moves underfoot to make the LMC database compatible with national maternity data collected by the National Health Information Service (Health Funding Authority, 2000). In 1999, the Government also introduced procedures to address issues associated with management of the perinatal database (Health Funding Authority, 2000; National Health Committee, 1999b)<sup>140</sup>. Movement towards establishment of LMC performance management regimes and standards for the use of obstetric technology is also apparent (Cowan, 2000; Health Funding Authority, 2000; National Health Committee, 1999).

Overall, it is clear that the capacity to provide effective maternity services for Māori has benefited from considerable progress in the implementation of Mauri Ora strategies across a range of agencies (Durie 1998, 2000; Health Funding Authority, 1999d; Ministry of Health, 1998b, 2001; Te Pumanawa Hauora, 1998; Te Puni Kokiri, 1998, 2000a, 2000b). The knowledge-base which informs Māori reproductive health has expanded in a number of previously uninformed areas and the environment for Māori health research is more positive than it has ever been. Significant developments include the establishment of national standards, procedures for the accreditation of ethics committees and a sharper awareness of ethical issues which impact on Māori involved with health research (Health Research Council, 1997). Strategic directions for Māori health researchers have also been identified along with an increased investment in Māori health research and the clarification of Māori health research paradigms (Cunningham, 1998; Health Research Council, 1998, 2001).

Against this background, the Mauri Ora framework also helps to explain the implications of *Hei orange mo ngā wāhine hapū i roto i te whare ora* for maternity service delivery and the achievement of Māori health development goals. It is clear, for example, that research topics at the heart of this thesis have

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<sup>140</sup> The first report from the committee appointed for this purpose is due in March 2002 and will contain data on homebirths for which no information is currently available.

identified a number of gaps in the knowledge-base which currently informs debate on the effectiveness of strategies for service delivery and the achievement of Māori health development goals. Within the maternity sector, this research has identified a general need to not only develop knowledge on psycho-social mediators of birth outcome but also to refine the paradigms which measure quality of childbirth experience. In this regard, maternal satisfaction with care is but one of several inter-related variables which provide information on the quality of childbirth experience. Indeed, there is a general need to establish service delivery strategies which are cognizant of the relationship between prenatal psycho-social variables and perinatal outcome. New Zealand, it seems, could make more use of the international childbirth literature on variables associated with the quality of childbirth experience.

For Māori, in particular, this research has a number of implications. As with the maternity sector, in general, there is a paucity of knowledge on the manner in which Māori childbirth experience may be influenced by established psycho-social mediators and little to inform debate on disparities which may exist in the development of, for example, prenatal social support, cognitive processes and/or coping strategies. An understanding of such issues may help to identify strategies for the achievement of Māori health development goals. In addition, however, there is the need to develop research paradigms that have the capacity to measure and monitor other psycho-social variables which may influence the quality of Māori childbirth experience. In this research, for example, feelings of waiora and ethnic identity demonstrated an ability to predict the quality of Māori childbirth experience.

It is interesting to wonder whether the development of Māori maternity initiatives which focus on the relationship between waiora, ethnic identity and the quality of childbirth experience would satisfy the call for services that are more responsive to Māori. In terms of the Mauri Ora framework, the development of such initiatives would provide a strategy for cultural affirmation. Strategies for the achievement of cultural affirmation have largely been neglected within the delivery of maternity services for Māori. Among Māori, however, the outcomes of this research clearly support the notion that development of maternity initiatives which foster access to te ao Māori childbirth resources will have a positive influence on feelings of waiora, Māori ethnic identity and the quality of Māori



childbirth experience. In this way, therefore, a number of Māori health development goals could be achieved. The establishment of te ao Māori childbirth resources would be an exciting challenge for Māori maternity service providers. Equally important, however, is the need for techniques and paradigms which have the capacity to measure the outcomes expected from implementation of Mauri Ora strategies. Towards this end, *Hōmai te Waiora ki Ahau* may have relevance in a range of contexts if the reliability of this measure can be improved.

In conclusion, it is clear that this thesis had a number of limitations, notably, the small sample size, the need to improve the amount of variance explained and the measurement of some variables. However, this research has also provided a foundation for new directions in the delivery of maternity services for Māori. Above all, it has drawn attention to the benefits which may be gained from strategies which encourage Māori to recreate and reclaim their right to a childbirth experience which expresses the profundity and verve of a Māori ethnic identity.

*Me whakapakari ki te hua o te rengarenga,  
ki te hua o te kawariki.*

# Glossary

ahuru mōwai	the womb, abode of the growing child
ara namunamu ki taiao	birth canal
ara	birth waters
ariki nui	high chief
atua kahu	evil spirit
atua	god, supernatural beings
a toru ngā ringaringa	symbol of tapu, birth. conception
ewe	whenua
ewēwe	blood relation
he tirohanga whānui	overview
hei-tiki	symbol to promote conception
hei oranga mo ngā wāhine hapū I roto I te whare ora	the wellbeing of women from Hauraki during pregnancy and childbirth
hine-ahu-one	earth formed woman also called hine-hau-one
hine-nui-to-pō	goddess of death, women of the night
hine-titama	first woman, dawn maiden
hokai rauru maruaitu	first phase of labour lasting ten days or more
hokai rauru nui	extended first phase of labour
hokai rauru whiwhia	first phase labour lasting up to ten days
hui	meeting, gathering
i tātāia ai te puhi-ariki	implanting of the power of procreation
iho	umbilical cord (piece which falls off)
iwi	collection of hapū, confederation of tribes
kai whakawhaanau	midwife
ka kara pinepine	blood collecting where the foetus is forming
ka ropetia te tamaiti	the child will be cared for
ka whaka-whetū	the coming into being of a child
kahu	woven cloak or garment
kainga	village
kanohi kitea	the seen face, a face seen in public
kanohi-ki-te-kanohi	face to face

kaokao	marriage mat, often made of human hair, upon which a woman may conceive and give birth
karaihi	personification of the female sex organ
karakia	prayer, incantation, acknowledgement
karanga	call of welcome
kaumatua	elder
kete	flax kit
koero	the second or third day of menstruation
koha	gift, tribute, acknowledgement of contribution
kohanga reo	pre-school facility
koru	symbol of new life, growth, conception
kotiate	weapon and tool of particular design
kouawai	a whitish substance, indicates the start of labour
koukou-piri ki ngā tangaroa	waning half moon
kua moe raua	marriage by deed of sleeping together
kumāmā	food cravings in pregnancy, driven by child
kunenga	the implanting of a child in the mother
kurawaka	red vessel, sacred place of red earth
mana	personal status, prestige, standing
mangeao	litsea calcaris
manaia	spiritual guardian, a bone carving
marae	facilities for gathering and meeting
matāuranga Māori	Māori knowledge
mātauranga whakawhānau	knowledge of Māori birth practices
mate-roto	abortion
mirimiri	massage
moko	lizard, guardian of the spiritual world, tattoo
mokopuna	grandchild
mouku	asplenium bulbiferum, hen and chicken fern
mua te whaia, muri te taea	using the past to describe the present
muka	flax fibre
nanu	secretions
ngā huanga	findings, outcomes

ngā korero ki te pēpi ki roto	talking to the baby within the womb
ngā wāhine hapū	pregnant women
ngā pūtake	the foundation
niho taniwha	symbolises family houses within the iwi
nikau	rhopalostylis sapida
noa	free from restriction or particular protection
ohaoha	invocation to promote wellbeing and fertility
oriori	lullaby
pae whakaruru/turuturu	birth posts
Pākehā	non-Māori
pānui	newsletter, notice
papuni	menstruation has stopped
parapara	blood/discharge before the placenta
patete	schefflera digitala, seven finger
patupaiarehe	fairies
piki whenua	stand over the whenua to promote conception
pito	umbilical cord (piece by child)
poho	abdomen
poia āku tāku poi	the twirling of my poi
ponga	cyathea dealbata, silver tree fern
pōtēteke	haka often performed by naked women
poutama	symbol of genealogy, intellectual development, the separation of Rangi and Papa
pou-tama-tāne	post for the son
pou-tama-wāhine	post for the daughter
pu manawa	natural talents, most have four of the eight
puapua	mons veneris
puhi	virgin
pukupā/koi purua	sterile
rakaunui	full moon
rangatira	chiefly, esteemed, person of high rank
rapou	women in their first pregnancy
raranga	weaving

raupo	typha orientalis, bulrush
raurekau	coprosma australis
rauru nui	normal labour, up to six days
rauru	spiral associated with genealogy and labour
rito	the gummy part of flax
rongoa	medicinal herbs and foods
rua i te pūkenga, i te horahora	when the child is completely formed
tahā koukou	small gourd
tane	god of light, nature and knowledge
tapu	sacred, special, in a state of protection
tapuhi	midwife
tataramoa	bush lawyer
taumau	arranged marriage, betrothal
te ao hurihuri	the world of change
te ao Māori	the Māori world
te ao Marama	the world of light
te ao wāhine	the world of women
te hīrina matua	implanting the power and sacredness in women
te hīringa tawhito-rangi	the power of procreation in mankind
te huarahi	the pathway
te ira atua	the spiritual element, supernatural, deities
te ira tangata	the human element
te pae o huaki-pōuri	a figurative reference to the loss of virginity
te pō kerekere	intense darkness
te pō kutikuti-kakarauri	absolute stillness and nothingness
te pō namunamu ki taiao	narrow passage to enter the world
te pō poao-nui	long, long night
te pō pahuri atū	purposeful turning, to set to work along the path
te pō tahuri mai ki taiao	progress towards the other side of the world
te pō tamaku	indistinguishable darkness
te pō tangotango	utter, complete darkness
te pō te kitea	not seen, lack of awareness
te pō tiwhatiwha	shimmers of light, spotted darkness

te pō uriuri	deep darkness of the sea green
te pō whawha	restless movement, groping, unstoppable change
te puawaitanga	state of the art, current knowledge
te reo Māori	the Māori language
te tiriti o Waitangi	the Treaty of Waitangi
te whare tangata	the house of humanity, female
te whaiao	the unfolding (of knowledge)
tiki	personification of the male sex organ, fertility
tionioni/oni/onioni	particular form of female dance
tūāhu	sacred place
tuapa tamariki	sacred symbol, usually a carved wooden post, to protect the child's wellbeing
tukutuku	ornamental lattice work
tūpuna	ancestor
uha	female element
uia mai koia	of course it is him, why do you ask?
uri	descendant
wāhi tapu	sacred site
wahine hapū	pregnant woman
waiata	song
waiora	psychological wellbeing
wairua	spirit
waituhitanga	cutting the umbilical cord
wānanga mo ngā wāhine hapū	a Māori system of antenatal classes
whaikorero	speech making
whakairo	carving
whakamamae	labour
whakanoa	make ordinary, remove tapu
whakapa/kokoti-uru/tuapa	sterility rites
whakapakoko	inanimate item carried to invoke conception
whakapapa	genealogy
whakapōhane	deliberate exposure of genitals
whakatapu	make sacred, place in protective state

whakatau whānau Māori	foundations for Māori childbirth
whakatina	protacted labour
whakato tamariki	fertility rite
whakawaiu	procedures to ensure an abundant milk supply
whānau	birth, the smallest unit of Māori society
whare hangahanga	first women fashioned by Tane
whare kahu/kahukahu	prebirth, foetus house
whare kohanga	nesting house, after birth
whare ngaro	lost or extinct house, no issue
whare nui/moe/tipuna	carved house, for sleeping, meeting
whare tamariki	womb
whare wāhiawa	the womb and birth canal
whariki	mat
wheiao	the head is engaged, the child is ready to begin the journey of birth, from womb to light of day
whenua	land, placenta
whiro	first night of the new moon

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## Appendix A: Iwi Mandate



HAURAKI WHANUI  
HAURAKI DISTRICT MAORI COUNCIL

---

5 February 1990.

Mrs Stephanie Palmer,  
C/O Post Delivery Centre,  
Waiomu,  
Thames.

Tena koe Stephanie,

He mihi atu tenei ki a koe mo tau nei tuahua mahi mo te 'whanau takotoranga tangata', hei oranga mo te tatou iwi hoki. No reira tena koe.

The Hauraki District Maori Council support you fully in your research on the care of Maori mothers during their pre- and post-natal stages, understandingly appropriating 'nga tikanga tuku iho a nga matua tupuna'.

The Council would also like to congratulate you on choosing this theme for your doctorate.

No reira, noho ora mai,  
Na

A handwritten signature in blue ink that reads "Lani Parsons".

Lani Parsons.  
SECRETARY.

---

CHAIRMAN:	Mr Jim Nicholls, P.O. Box 33-316, Takapuna.	Phone No: (09) 497 847
SECRETARY:	Mrs Lani Parsons, 20 Richmond Street, Waihi.	Phone No: (08163) 6789

## Appendix B: Ethics Approval



Waikato Waikato

A26A

Our ref: SAC:KD

12 November 1990

Ms S Palmer  
41 Bader Street  
Melville  
HAMILTON

Dear Ms Palmer

EVALUATION OF PSYCHOLOGICAL AND PHYSIOLOGICAL WELLBEING OF MAORI  
WOMEN IN ANTENATAL CARE AND THE BIRTHPLACE

I am pleased to advise that the above research proposal was approved  
by the Board at its meeting 12 November 1990.

Yours faithfully

FOR GENERAL MANAGER

2/A:1420

Waikato Area Health Board  
Pembroke Street  
Hamilton, New Zealand  
PO Box 934  
Facsimile (071) 394 327  
Telephone (071) 394 679

## Appendix C: Negotiations over ethical issues (3 letters)



23 May 1994

Ms S Palmer  
Kennedy's Bay Road  
COROMANDEL

Dear Stephanie

### PHD RESEARCH "HEI ORANGA MO NGA WAAHINE HAPU O HAURAKI I ROTO TE WHARE ORA" (No 32)

Thank you for forwarding a copy of your letter to Dr Raman for the information of the Ethics Research Committee. Dr Raman also contacted the committee expressing his support for your project and enclosing a copy of his response to your letter.

The committee did not agree to your having immediate access to medical records on the grounds that this would be both unethical and illegal (in terms of the Privacy Act). Similarly, whilst the committee appreciated Dr Raman's desire to assist with recruiting participants it could not condone your direct access to the women attending antenatal clinic since this would be a breach of patient confidentiality.

The committee did suggest that pamphlets about the proposal could be made available at the clinic and agreed wholeheartly with Dr Raman's suggestion that you use the media to advertise widely within the hospital and in the community. They also suggested that you may be able to use the kuia to assist with recruitment.

The committee could not support the suggestion that incentives or rewards be offered to potential participants. It has, in fact, adopted a precedent to the contrary.

Whilst conveying these sentiments the committee asked that you be advised of their continued support for your most worthwhile proposal. Mrs Anne O'Halloran has been requested to assist you in this regard and I believe she has already been in telephone contact with you. We recognise that you have encountered considerable difficulties during the course of the project and look forward to reaching a satisfactory solution to the recruitment problem in the near future.

Yours sincerely

Rosemary De Luca  
CHAIRPERSON  
ETHICS RESEARCH COMMITTEE

### CORPORATE CENTRE

Selwyn St. P O Box 934, Hamilton, New Zealand. Phone 0-7-839 4679 Fax 0-7-839 4327  
*Health Waikato Ltd*



Kennedy's Bay RD  
Coromandel  
ph(07)8668-579

27 May 1994

Research Committee  
Health Waikato  
Corporate Centre  
PO Box 934  
HAMILTON

Attention: Rosemary de Luca

Tena koutou katoa

Re: Ethics Committee Decision Regarding Direct Access to Potential Participants

Thank you for the time and attention your committee have recently devoted to issues regarding direct access to potential participants for this research. I understand from Sylvia Carroll that the Committee decided it unethical and illegal to allow me direct access to potential participants through the maternity annexe register. Anne O'Halloran has been in contact with me since your meeting on Wednesday, 18 May. I appreciate her sincere efforts to expedite communications between myself and midwives involved with booking waahine hapu into the Thames maternity annexe.

However, after several months of futile efforts attempting to make the midwife strategy work, I am reluctant to continue with this procedure. As always, time passes too quickly, this project is due for completion in March 1995. As principal researcher I would like to pursue the most effective and efficient recruitment strategy possible for the time remaining and that would be one where I have an active involvement in initial contact with potential participants. After discussions with several people, including Bruce Scoggins, Director of the Health Research Council and Belinda Green from the Office of the Privacy Commissioner, about the ethics and legality of direct access in terms of the Privacy Act and my own specific position, I believe it worthwhile, for the following reasons, to request that the Ethics Committee reconsider their decision.

By way of introduction, the Health Information Privacy Code of Practice was issued by the Privacy Commissioner in July 1993. It provides specific guidance for health agencies on how they should comply with the Privacy Act. I quote "*Where the code applies it substitutes for the principles [of the actual Act]. For example, an action that would otherwise be a breach of one of the principles is deemed not to breach that principle if done in accordance with the code*" (Fact Sheet #10, Privacy Act 1993, Health Information Privacy Code of Facts, Privacy Commissioner, 1993). In the following discussion therefore, I refer to the Code of Practice, rather than the Privacy Act itself, unless otherwise stated.

Before beginning a discussion on applications of the Privacy Code, it is pertinent to consider my status as a researcher in relation to the meaning of "health agency". By definitions explained in the Privacy Code I am ethically and financially bound to at least three of the described health agencies, these being (1) the Foundation for Research, Science & Technology (an agency which provides services in respect of health information, including an agency which provides such services under an agreement with another agency); (2) Thames Hospital through honorary staff

status as well as Health Waikato - acceptance of a vehicle as remuneration for reports technically indicates a form of employment by that agency (both established under the Health and Disability Services Act, 1993), and (3) the Health Research Council established under the Health Research Council Act 1990 (see Part I, Interpretation, Health Information Privacy Code, 1993). In accordance with advice from the Office of the Privacy Commissioner, it is reasonable therefore to consider myself an employee of a health agency.

In terms of the Health Information Privacy Code of Practice 1993, it appears that the exceptions of Rules 10 and 11 in particular, would allow me legal access to the names and addresses of potential participants for this project. However, other rules within the code would also seem to permit this methodology. To be thorough in my examination of the Code of Practice, particularly with respect to possible ramifications for Health Waikato should my request be granted, I shall consider the possible applications of each rule, in relation to this project, respectively (please note that only the applicable aspects of Rules and Commentary are quoted).

#### **Rule 1: Purpose of Collection of Health Information**

This rule states that "Health information shall not be collected by any health agency unless - the information is collected for a lawful purpose connected with a function or activity of the health agency". Under the Code commentary purposes connected with function or activity of the Agency include:

Training and education:- to act as a record of the health care problem and its management so as to assist in developing and maintaining expertise and competence by those involved in the treatment and management of that patient, or the future treatment and management of other patients in similar circumstances; and

Monitoring:- to monitor the quality of patient care, treatment and health status.

The objectives of this project fit those of training, education and monitoring.

#### **Rule 2: Source of Health Information**

"Where a health agency collects health information, the health agency shall collect the information directly from the individual concerned". It is not necessary for a health agency to comply with this rule if the agency believes, on reasonable grounds:

That the information will be used for statistical or research purposes and will not be published in a form that could reasonably be expected to identify the individual concerned.

Within the commentary the rule that health information be collected directly from the individual emphasises and recognises the need for **informed consent**. The purpose of requesting patient information for this project is specifically related to obtaining informed consent, ie I have requested access to the maternity annexe register so that I can approach these women specifically to obtain consent for project participation.

#### **Rule 3: Collection of Health Information from Subject**

"Where a health agency collects health information directly from the individual concerned, or from the representative of that individual, the health agency shall take such steps as are, in the circumstances, reasonable to ensure that the individual concerned is aware of

the purpose for which the information is being collected; and  
the intended recipients of the information ... "

The requirement to inform the individual of the purpose of collection is clearly explained within the commentary. However it is also noted that it will not always be apparent where

health information is being collected for research purposes. Also, the intended recipients of health information will not always be obvious, particularly where health information is sought for research purposes.

That the purpose of collection and the recipients of information need to be clearly explained to an individual is imperative. The correct process for doing this is one of informed choice and consent. **Informed choice and consent is the explicit and sole purpose of requesting this information.**

**Rule 4: Manner of Collection of Health Information** Not applicable.

**Rule 5: Storage & Security of Health Information** Not applicable.

**Rule 6: Access to Health Information** Not applicable.

**Rule 7: Correction of Health Information** Not applicable.

**Rule 8: Accuracy, etc, of Health Information to be Checked Before Use** Not applicable.

**Rule 9: Retention of Health Information** Not applicable.

**Rule 10: Limits on Use of Health Information**

"A health agency that holds health information that was obtained in connection with one purpose shall not use the information for any other purpose unless the health agency believes, on reasonable grounds ...

That the use of the information for that other purpose is authorised by the individual concerned (a); or

That the purpose for which the information is used is directly related to the purpose in connection with which the information was obtained (e); or

That the information is used for statistical or research purposes and will not be published in a form that could reasonably be expected to identify the individual concerned (f)"

Clause (a) indicates that it is lawful to obtain authorisation from an individual to use information for another purpose. Therefore it must be lawful to seek that authorisation from the individual in the manner which I intend to do.

Clause (e) allows for information collected for one purpose be used in a project directly related to that purpose. As is the case in this project. Furthermore, no information, other than names and addresses, will be collected without prior consent.

Clause (f) allows for information to be used for research purposes. The issue of whether it will be published in an identifiable form is not applicable because the information is sought solely for the purposes of informed consent to participate in the project. Following consent, information will not be published in an identifiable form.

**Rule 11: Limits on Disclosure of Health Information**

"A health agency that holds health information shall not disclose the information unless the agency believes, on reasonable grounds, ...

That the disclosure of the information is required for the purposes of identifying whether an individual is suitable to be involved in medical education

and so that individuals so identified may be able to be contacted to seek their authority in accordance with subclause (1)(b) of this rule", ie that disclosure is authorised by the individual concerned (2k); and

Nothing in this rule derogates from: Section 22C (1)(a) of the Health Act 1956, (6a), ie

Section 22C Disclosure of health information - (1) Any person (being an agency that provides health services, or disability services, or both, or being a purchaser) may disclose health information (a) if that information is required by any person specified in subsection (2) of this section ... ie (2) Any employer of a purchaser, for the purposes of exercising or performing any of that purchaser's powers, duties, or functions und the Health & Disability Services Act 1993".

The requested disclosure of name and addresses is specifically so that individuals may be contacted for consent and authority. It is understood, from the commentary that "sometimes it will be necessary for the educator to view the records of possible subjects to check whether they would be suitable [for inclusion in a project]. Exception (k) will allow this so that the chosen subjects can then be approached to see if they are willing to participate. Furthermore, the disclosure of such information to me is permitted as I am, technically speaking, an employee of a health agency as described in section 22C and outlined above.

**Rule 12: Unique Identifiers** Not applicable

My reasons for requesting that the Ethics Committee reconsider the legality of disclosing patient names and addresses are therefore outlined above. The ethics of that decision are not questioned. However it is relevant to reiterate that the ethical issue of allowing me access to that information is supported by (1) Dr Raman, the Chief Obstetrician of Thames Hospital, (2) Larry Clarke, the District Manager of Thames Hospital and (3) The Hauraki Maori Trust Board, see enclosed letter.

Thank you once again for your time and attention.

References

1. Health Information Privacy Code of Facts, Privacy Commissioner, Auckland, 1993.
2. Health Information Privacy Code 1993 (Temporary), Issued by the Privacy Commissioner, 1993.

Yours sincerely

Stephanie Palmer

copies to: Dr Raman, Chief Obstetrician, Thames Hospital

Mr Larry Clarke, District Manager, Thames Hospital  
Dr Bruce Scoggins, Director, Health Research Council  
Assoc. Professor Jane Ritchie, Supervisor, University of Waikato  
Belinda Green, Office of the Privacy Commissioner  
Denise Messiter, Maori Health Manager, Hauraki Maori Trust Board  
Bev Adlam, Child & Maternal Health, Health Waikato



## HEALTH WAIKATO

*Manakitia Te Ira Tūngata  
Caring for Life*

17 June 1994

Ms S Palmer  
Kennedy's Bay Road  
COROMANDEL

Dear Stephanie

**PHD RESEARCH "HEI ORANGA MO NGA WAAHINE HAPU O HAURAKI I ROTO  
TE WHARE ORA" (No 32)**

Thank you for attending the meeting of the Ethics Research Committee on 15 June 1994 to further discuss your proposal.

Whilst the committee was not unsympathetic with regard to the frustrations you have experienced in attempting to gain consent for retrospective analysis and to recruit waahine hapu for interview, we have to advise that in order to protect the privacy of our patients we are unable to give you direct access to medical records or to allow you to make direct contact with patients in accordance with your request.

As we outlined at the meeting, honorary staff status only allows someone employed in the area where the data is collected and used to access that information. We have to bear in mind that the information given by women to the Thames Hospital was given for the birth of their child, not for research purposes.

We are aware that at this stage the Health Research Council endorses the view that you should work through practitioners and not have direct access to patients for treatment.

We can only suggest that you continue to recruit through contact with the maraes and community groups and that you approach the Health Research Council for an extension to make this possible.

We trust that through contact with these groups the project will gain support with the Maori women and that they will appreciate the value of the research which you are undertaking.

Yours sincerely

Rosemary De Luca  
CHAIRPERSON  
ETHICS RESEARCH COMMITTEE

### *CORPORATE CENTRE*

Selwyn St. P O Box 934, Hamilton, New Zealand. Phone 0-7-839 4879 Fax 0-7-839 4327

*Health Waikato Ltd*

## Appendix D: First Agreement for Recruitment Strategy

24 September 1993

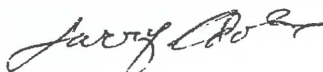
**Outcomes of meeting between District Manager, Charge Nurse Janet Clissold, and Stephanie Palmer held on Thursday 23 September 1993.**

---

1. **General Outline of Research:**  
Stephanie outlined the parameters of her research proposal and the process that she will go through.
2. **Retrospective part of the Research:**  
Stephanie indicated that she would like to go back eighteen months and peruse the records of Maori clients who had their babies in Thames Hospital and try to make contact with these people with a view to getting their permission to peruse their files and be part of the research project. This will require some input from Thames Hospital staff.
3. **Marketing of Research:**  
So far the major discussions regarding the research project between management of Thames Hospital and the Ethics Committee: Health Waikato. Further work needs to be done as suggested by Janet in terms of discussing the research project with G.P.'s involved in maternity services and the Independent Midwives. Also a meeting to discuss the proposal with Dr Raman was highlighted.
4. **Process from here:**
  - (i) Set up meetings with G.P.'s and Independent Midwives, also with Dr Raman.
  - (ii) Identify procedures for eliciting the Maori Women over the last eighteen months who had babies in Ward 1. Possible meeting with Jonathan Rayner.
  - (iii) Honorary staff status for Stephanie when she is working in the Hospital to be organised by Larry Clarke.
  - (iv) Resources in terms of space for Stephanie to work in to be organised by Janet.
5. **Conclusion:**  
The following conclusions were reached that for all matters relating to the research project to be discussed with Janet Clissold, and matters of resources and overall management sanction to be referred to the District Manager.

Stephanie to keep in contact with the District Manager and to give him a complete copy of the final documentation for the research before the project is started.

The research project was fully supported by the District Manager and the meeting finished on this note.



## Appendix E: Community Panui

May, 1992

**Tena koutou Rangatira ma**

*Ko Hikurangi taku maunga  
Ko Waiupa te awa  
Ko Porourangi te tangata  
Ko Harataunga (Hauraki) taku turangawaewae  
Ko au te mokopuna o nga whanau Hale raua ko Harrison  
Ko Stephanie (Kay) Palmer taku ingoa*

This panui is to tell you about a project which is happening here in Hauraki:

### **HEI ORANGA MO NGA WAAHINE HAPU I ROTO I TE WHARE ORA**

The project is a joint initiative which has the support of Te Roopu Hauora o Hauraki, the Hauraki Maori Trust Board, the Whare Wananga o Waikato, the Maori Health Research Council and the Foundation for Research and Science Technology.

I have included a panui which outlines for you the kaupapa of this work. In essence we aspire to promote the cultural identity of Maori women in pregnancy and childbirth. In the long term we aim to secure the establishment of "Wananga mo nga waahine hapu" for Maori women throughout Hauraki (a kind-of Maori alternative to the antenatal class).

There are several parts to this work:

- (1) A retrospective analysis of medical records for women who gave birth in Thames Hospital during the period mid-1991 to mid-1992. We hope to understand from this the extent to which Maori childbirth is affected by medical complications and/or interventions;
- (2) Interviews with waahine hapu (and their whanau if they wish) to determine their own experiences during maternity and childbirth;
- (3) Interviews with kuiia and whaea who are not presently uwaha o te ira tangata, but who have experienced many changes in maternity and childbirth services over the years; and
- (4) The running of a Wananga for waahine hapu, which is expected to start towards the end of May, or mid-June.



I will therefore be approaching women from your community to ask whether they would like to take part in this project. I realise that many of us are suspicious of “research” projects and understand why this may be so. However, please allow me to say the following in support of this particular research project:

(a) The aim of this work is to understand the Maori woman’s experience of childbirth in Hauraki. We will be looking at things like ... the amount of care received while hapu; our access to information and services; how well we feel; whether being Maori makes a difference for us; and our personal sense of wellbeing - both physical and mental;

**(b) We will not therefore be publishing or documenting any information or material on tikanga Maori or tuturu Maori aspects of birth. This knowledge is protected by tapu and belongs only to the whanau, hapu and iwi involved; and**

(c) The issues of interest in this project are political and cultural. We ask for example:- whether GP, antenatal and maternity services are effective for Maori women in Hauraki; what we can do to enhance and promote kaupapa Maori maternity facilities; and whether existing psychology for wellbeing is relevant for Maori people.

We believe that this work may help reduce the incidence of complications and medical intervention in Maori women’s births. We hope that a further outcome of this project will be to facilitate the involvement of Maori people themselves in the care and wellbeing of waahine hapu.

If you would like to know more about this project, please contact me at Poutu’s whare, ph 88-351 Thames.

Noho ora mai - kia ora,

na Hikitapua  
(Stephanie Palmer)

## Appendix F: Panui to Medical Professionals (3 items)



University of Waikato

Te Whare Wānanga o Waikato  
Private Bag, Hamilton, New Zealand.  
Fax (071) 560-135. Telephone (071) 562-889.

The Department of Psychology

Fax (071) 562-158

11 January 1994

[to Hauraki General Practitioners, list attached]

Tēna Kōe

### **PhD research on the wellbeing of Māori women during pregnancy & childbirth**

I am writing to inform you of my research which may involve participants under your care. The subject of my thesis is "hei oranga mō ngā waahine hapu (ō Hauraki) i roto i te whare ora", or the psychological and physiological wellbeing of Māori women in maternity. The substance of this work is briefly outlined in the enclosed package. More specifically, however, I am looking at factors which may influence wellbeing. These include - the development of effective cognitive mediators, cultural identity, support, attention, antenatal care and the need for medical intervention.

It is important to advise you of my recruitment methodology which aims to utilise ethnic identity information gathered during the booking-in procedure for Thames maternity annex. In general, this process will be completed by independent midwives during home interviews, or a midwife at the annex itself. It is for this reason I have written the enclosed letter to midwives associated with Thames Hospital. I seek their assistance to facilitate recruitment of potential participants for this project by introducing the recruitment package. The objective of this package is to gain potential participant's permission for further contact. This seemingly complicated approach is shaped by ethical concerns over patient confidentiality rights.

I have assumed, General Practitioners do not book women into the maternity annex but allow midwives to take care of these details. If this is not the case I would appreciate the opportunity for further discussion. I can be contacted on (07)8668-579 which has an answerphone if I am not available.

The cover-page of this recruitment package is a poster promoting the profile of this project. I wonder if it would be possible for you to display this poster in your surgery. I hope this will help generate the interest of potential participants. An effective recruitment strategy is essential to the success of this research.

If you have any questions or concerns, please do not hesitate to contact me. Thank you for your attention.

Kia ora

Stephanie Palmer





## The University of Waikato

Psychology Department

Te Whare Wānanga o Waikato  
Private Bag 3105, Hamilton, New Zealand.  
Telephone (07) 856-2889

26 January 1994

### HEI ORANGA MAHI

Tena koe

**re: PhD Research: Hei Oranga mo nga Waahine Hapu of Hauraki i roto i te Whare Ora**

The Psychological & Physiological Wellbeing of  
Maori Women in Maternity for the Hauraki Region

I am a PhD student enrolled with the University of Waikato attempting to complete research in the Hauraki region. My proposal has been approved by the Health Waikato Ethics Committee and I am working under the supervision of Larry Clarke and the Charge Nurse of Ward 1.

The subject of my thesis is the psychological and physiological wellbeing of Maori women during maternity. This study involves considerable analysis of both the medical and psychological position of Maori women during pregnancy and childbirth. Medical aspects of interest to the study include obstetric history, the rates of complications experienced during maternity and the need for interventions during childbirth. Psychological factors include access to services and professionals, sources of support and attention, whether women receive adequate antenatal care, whether the birth experience is affected by differences in the amount of antenatal care, cultural identity and general states of wellbeing. This project attempts to incorporate both kaupapa Maori and mainstream psychology research design.

The methodology involved in this project includes an interview of Maori women during the third trimester of pregnancy. It was initially envisaged that the first approach to potential participants would take place in the maternity annex while women booked-in for delivery. This procedure seems feasible because it is during this process that women indicate their ethnic identity. All women self-identifying as Maori, are to be introduced to a recruitment package explaining the general goals of this project and seeking permission for me to contact them in the near future.

However, improvements to booking-in procedures mean that midwives often book women for delivery during home visits, consequently the maternity annex is no longer a comprehensive recruitment facility. It is for this reason that I now write to you. I seek your assistance to recruit potential participants for this project.

I would like you to introduce the enclosed recruitment package to all women who identify themselves as Maori. The package is largely self-explanatory, it's primary objectives being to inform potential participants of the project and encourage these women to allow their names and addresses to be forwarded to me. I will then arrange a meeting during which I explain more fully the purposes of this work and, if possible obtain formal consent for participation in the project.

Participants will be asked to take part in two interviews. The first during the third trimester of pregnancy, the second following childbirth, preferably in the maternity annex. All information will be totally confidential and participants are free to withdraw from the project at any time.

The recruitment package is presented in plain english designed to be easily understood. It attempts to simply coax potential participants to read about the project and hopefully, agree to an initial meeting. The package includes the following:

1. Cover page & explanation

The design, colours and symbols of the cover page encapsulate the whole purpose of this project - the total wellbeing of Maori women in maternity. It attempts to capture the interest of potential participants.

2. Kaupapa (Objectives)

The kaupapa of this project is explained in Maori for those who have an understanding of the reo (Maori language). The kaupapa is included to satisfy questions from other members of the women's whanau (particularly kaumatua or elders).

3. Flyer

The next page condenses important aspects of this work into informal language used by most of us within the whanau.

4. Information Sheet

The information sheet provides detail about the aims, objectives and methodology involved in this project. It states that women presently carrying are asked to participate in two interviews, one antenatal, the other postnatal. It also shows that birth-related medical files of women who have given birth in Hauraki over the last 18 months, are being recruited for retrospective analysis, or the development of a base-line data maternity profile.

This sheet is the most difficult part of the recruitment package to understand. It is therefore recommended that you read through this information with potential participants, and if possible explain any queries which may arise, to the best of your ability. Women should also be encouraged to ring me (ph Coromandel 8668-579) for clarification of any material.

5. Mihi

The next pages is a mihi or greeting to the women which gives personal details about me, the researcher.

#### 6. Potential Participant Details

The final page requests a contact name, address and phone number. This information will allow me to make contact in the near future. It should be noted these details do not indicate consent to participate in the study. It merely gives me the opportunity to meet face-to-face, with potential participants.

A self-addressed envelope is included so that these details can be forwarded to me at the earliest convenience.

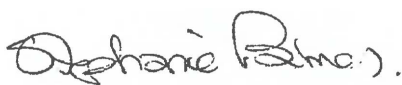
I enclose only one copy of the recruitment package for your perusal at the moment. I would appreciate you phoning me in the near future to confirm your involvement and discuss any questions which may arise. You could then indicate how many packages I should forward to you depending on the number of Maori women you are likely to book-in over the next few months. I am aiming to interview as many Maori mothers as possible, but at a minimum require 50 for an acceptable standard.

You will appreciate that an effective recruitment process is crucial to the success of this project. It would have been preferable for me, if this process could have been completed at the maternity annex, but the home booking-in system makes your involvement essential. I am therefore sincerely grateful for your support and co-operation. I apologise for any inconvenience or additional workload that this may cause.

Your primary objective in this matter is to facilitate the agreement of potential participants to meet with me. The purpose of our meeting will be to explain the project further and if possible, obtain consent for participation. To measure the effectiveness of this approach, it would help me considerably if you would keep a record of the number of women who receive the recruitment package. I would also appreciate your assistance in returning any completed agreement forms where convenient.

Thank you for your attention, I look forward to hearing from you in the near future.

Kia ora



Stephanie Palmer

## Midwives Newsletter #1, April 1994

### Hei Oranga mō ngā Waahine Hapu ō Hauraki i roto i te Whare Ora

#### *Tēnā koutou katoa*

The purpose of this newsletter is to clarify the role of midwives in this project and keep you informed of progress towards recruitment objectives during the year.

#### 1. The Role of Midwives in this Project

I cannot avoid involving midwives in recruitment aspects of this project. The ethics of patient confidentiality make it impossible for me to attempt making direct contact with women. Your role therefore is to **facilitate the recruitment of waahine hapu for interview in this project**. In particular your tasks are as follows:

- (a) To pass an Information Package to **all** Maori mothers, including those presently due for delivery and those who have already booked in;
- (b) To verbally outline the objectives of this work and if necessary take the time to read through an Information Sheet enclosed within the package;
- (c) To sincerely encourage women to give permission for me to contact them by either asking "*Do you mind if I pass your name to Stephanie, she will contact you to explain this project further?*", or requesting that women write down their name, address and phone number to be forwarded to me by mail or through you, the midwife;
- (d) To keep statistics on the number of women receiving this Information Package. This will allow me to measure the effectiveness of this approach. The number of women receiving packages should roughly equal that of women delivering in Thames Maternity Annexe; and
- (e) To contact me without hesitation with questions, queries or further information (ph 8668-579).

\*\*\* Additional Information Packages are available in the cupboard outside the Charge Nurse office. They are in large brown envelopes. Ask either Gail, or myself to assist you finding these if necessary.



## Appendix G: Letter for Retrospective Analysis



25 January 1994

Dear

### **INVITATION TO PARTICIPATE IN A RESEARCH PROJECT**

#### **HEI ORANGA MO NGA WAAHINE HAPU O HAURAKI I ROTO I TE WHARE ORA**

We are writing to inform you of a research project currently underway at our hospital. This project is the basis of a doctorate thesis which explores the psychological and physiological well being of Maori women giving birth in Hauraki. Please find enclosed a panui explaining the objectives of this work.

Your role in this project would be to allow the researcher to view our files relating to the recent birth of your baby. The researcher will be documenting medical aspects of your experience - for example:

Whether childbirth required assistance or medical  
intervention, and  
Whether any complications occurred.

This information is totally confidential and no names will be recorded at any stage. Thames Hospital supports the objectives of this work, which is to clarify the medical experience of women giving birth in our maternity annexe. We encourage you to seriously consider participation in this project.

We invite you to please complete and return the enclosed form which gives us permission to forward your name to Stephanie Palmer (the researcher). She will then contact you by letter requesting formal consent to view your file. If you have any questions or concerns regarding this project, please feel free to contact Stephanie Palmer Tel 07-8668579.

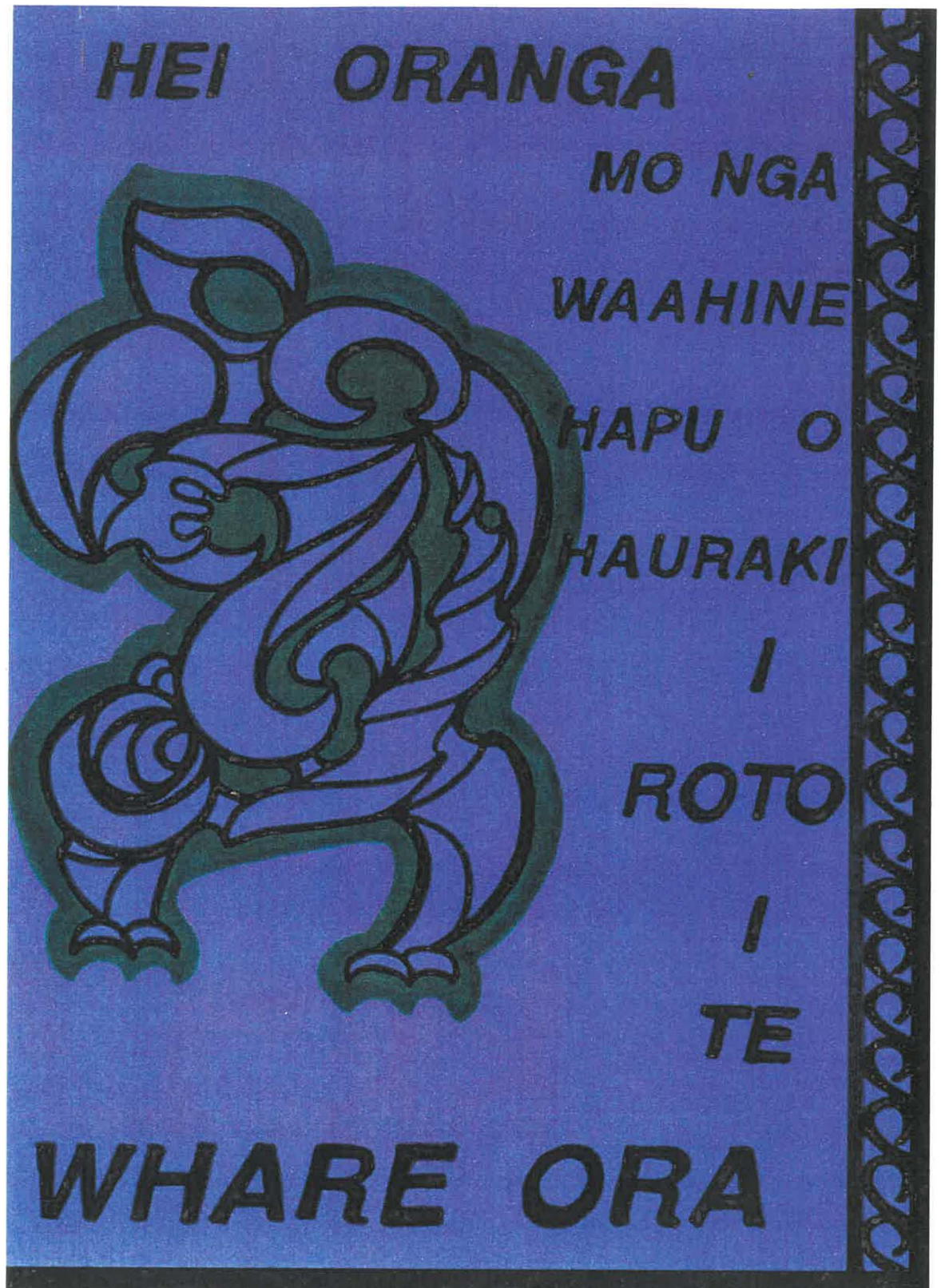
A return envelope is enclosed. Thank you for your attention to this matter.

Yours sincerely,  
**Larry Clarke**  
District Manager

p.p.   
**Gwen Howe (Mrs)**  
Executive Secretary

#### **THAMES HOSPITAL**

Mackay St, P O Box 707, Thames, New Zealand Phone 0 7-868 6550 Fax 0 7-868 9864  
Health Waikato Ltd





The design on this cover page is that of *manaia*, the spiritual guardian.

It creates, in this case, an image of protection for pregnant women. *Waahine hapu* sacred, special, precious. Without you we would cease to exist.

The colours of purple, green and black indicate the importance of understanding, wisdom and knowledge for those who carry our future generation. The curling *kowhaiwhai* represents an eternal struggle for growth and development as it happens within the womb and within our minds.

The purpose of this work is the complete wellbeing of pregnant women in Hauraki - *Hei oranga mo nga waahine Hapu o Hauraki i roto i te whare ora.*

***I invite you to take part in this project.***

## **TE KAUPAPA O TENEI AROHANGA**

***Nga ahuatanga Maori mo te wahine hapu:***

***E kii ana e nga tohunga "ma te manaaki pai hia te wahine hapu ka mama ake te whakawhanau." He aha ai? Kia mau tonu ai i nga waahine te whakahaere i o ratau whakawhanau. Ki te pu mau tatau ki nga ahuatanga Maori ka mau tonu te mana whakawhanau ki nga wahine;***

***E ki ana matau - "Kaore e whai tikanga ana nga whare kohanga pakeha e tika ana mo nga wahine Maori". Ko te hiahia he whakahaerenga hei hiki i nga ahuatanga Maori.***

***E ki ana matau e manaaki tonutia ana nga wahine Maori hapu, kaore ko tera e taea ana e nga whakahaerenga o te ao whanui, engari ko era e mau tonu ana ki roto i te wahi tika, ara, kei nga whanau i ko tenei e tika ana kia whakaarahia, a kia tautokohia i roto i nga manaakitanga mo nga tuahine Maori.***

***Ki te whai waahi ki te korero ki nga wahine Maori i roto i te whare kohanga he wa e tika ana hei awhina hei whakahau i nga ahuatanga Maori mo te whakawhanau.***

***Ina he wahine Maori nei matau, e tika ana kia awhinatia matau ki te whakataunga i a matau ki nga hohonutanga Maori ki te whakawhanau. Tena kia korero tahi tatau, kia marama ai tatau ki a tatau, tena kia whakapau tatau i o tatau kaha ki te ahuatanga o te whare kohanga o te Maori.***

***Ko te taunga o tenei arohanga he whakamana katoa i nga ahuatanga mo te whakawhanau. E hiahia ana matau ki te korero ki a koe mo enei mea.***

THIS PROJECT IS ABOUT ...

MAORI WOMEN

IN  
PREGNANCY  
AND CHILDBIRTH ...

***HEI ORANGA MO NGA WAAHINE HAPU  
O HAURAKI I ROTO I TE WHARE ORA***

IT IS ABOUT ...  
OUR EXPERIENCES,  
OUR IDENTITY, AND  
OUR WELLBEING

***THERE ARE NO SECRET MOTIVES,  
WE DON'T WANT TO FREAK YOU OUT***

**IT IS TOTALLY CONFIDENTIAL  
NO NAMES WILL BE RECORDED  
YOU CAN WITHDRAW AT ANY TIME**

# Tena koe,

Ko tenei taku mihi ki a koe

*Ko Hikurangi te maunga  
Ko Waiapu te awa  
Ko Porourangi te tangata  
Ko Harataunga (Hauraki) taku turangawaewae  
Ko nga whanau Harrison raua ko Hale taku whanau ukaipo  
Ko te roopu Hauora o Hauraki taku whanau tautoko*

*Ko tenei te whakatauaki o tenei mahi*

*Tenei atu ki ahau  
te wairua o te tangata  
hei toi-ora o taua tamariki*

*My father is of English descent. My mother a Maori who grew up in Kennedy's Bay. Although we affiliate to Ngati Parou, Hauraki has always been our home. I am a mother of three children. My baby is less than a year old. At 23 I enrolled at Otago University to study for a science degree. In 1990 I began this doctorate. The main reason, at the time, being that my mother passed away a month before the birth of my first child. It made me think hard about the position and wellbeing of waahine hapu.*

The passage of this project has been rough and full of both personal and professional obstacles. However, it is at last at the point of contacting you - other waahine hapu from Hauraki.

**I ask that you agree to meet with me so that I can explain  
in person the objectives of this project.**

**You will not be hassled if you decide not to be  
involved.**

To arrange a meeting I need your name, address and phone number (if possible).

Thank you for your attention.

*Kei te wai manaakitanga,*

Stephanie Palmer.

# HEI ORANGA MO NGA WAAHINE HAPU O HAURAKI I ROTO I TE WHARE ORA

This research concentrates on the experience of Maori women during pregnancy and childbirth. An important thesis in the project is that our birth experience is significantly affected by increased complications and medical interventions. This work is, therefore, heavily structured to take account of medical aspects in maternity. Our psychological wellbeing is however, also relevant and part of this work attempts to consider that position within Maori dimensions. The overall objective of this project is to promote the wellbeing of Maori women in maternity by developing appropriate services. The methodology includes the following aspects:

## *1. Antenatal*

During this phase I am interviewing women who are presently carrying their babies, that is, somewhere between the 6th- 9th month of pregnancy. It is our physiological and psychological wellbeing that is of interest. Questions are being asked about:

- (a) the types of support available;*
- (b) medical and/or other complications experienced;*
- (c) the suitability of existing antenatal care; and*
- (d) our general state of wellbeing.*

## *2. Postnatal*

Women previously seen during pregnancy are asked to take part in another short interview, once their babies have been born. The purpose of this meeting is primarily to discuss the actual birth experience and consider maternity files.

### **3. Maternity Files**

The perusal of maternity files is an important aspect of this project. It is largely a statistical exercise where data on medical aspects of childbirth is collected. We hope to gain an understanding of the medical interventions involved for women in Hauraki. It is, for example, important to know to what extent our experience is influenced by caesarean section, forceps delivery, epidural, unusual presentation and episiotomy. This information is essential to the development of appropriate maternity services for Maori women in Hauraki.

**Women who have given birth over the last 18 months, are also being asked for permission to view their maternity files. The information obtained from these files will allow the development of what we call base-line data. When current data is compared with base-line data, any changes in maternity profiles (ie the medicalised experience of childbirth), will become clear. This will tell us many things, like for example whether changes to maternity services offered at Thames Hospital are actually improving the experience of women in childbirth.**

***Any information obtained in this research will be totally confidential. No names will be involved at all, other than for the purposes of meeting each other and arranging appropriate consent for access to medical files.***

***Your participation and help is both valuable and crucial.***

This work is funded by the Maori Health Research Council and  
the Foundation for Research, Science and Technology

Kia ora,

Stephanie Palmer  
na Harataunga (Kennedy's Bay)

**Name:** \_\_\_\_\_

**Address** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Contact Phone Number**  
**(if possible):** \_\_\_\_\_

**Please give this information to your midwife**  
**or post it to me in the enclosed envelope.**

# ***Health Waikato***

## **PARTICIPANT CONSENT FORM**

You are being asked to take part in a research project which talks about being hapu and giving birth. The researchers hope to learn more about the actual experience of Maaori women in maternity today. The project has been reviewed and approved by the Health Waikato Research & Ethics Committee.

With this consent form is an Information Sheet (yellow paper). Read this sheet. It tells you about the project. If you do not understand something on the Information Sheet ask for help. Do not sign the consent form unless you understand everything on the Information Sheet.

The principal researcher in charge of this project is Stephanie Palmer. You can contact her on phone 8668579 if you have any questions. This project is part of a doctorate research programme which is supported and funded by the University of Waikato; the Foundation for Research, Science and Technology and the Maori Health Research Council. You may wish to discuss this project with Associate Professor Jane Ritchie at the University of Waikato.

***You do not have to take part in this project. You will still receive the best possible maternity care if you do not take part. If you do agree to be interviewed and then change your mind - you are free to withdraw at any time.***

### ***The Health Consumer Service Trust***

The Health Consumer Service Trust has been set up to encourage honest communication between those providing and receiving health care. Their role is to act independently; to provide protection for anybody who uses health services and to continue inquiry until resolution is reached. On the back of the Health Consumer Trust pamphlet which you have been given is a list of Consumer Associates. If for any reason you have an enquiry about this project you may contact one of these people.

### ***OTHER PEOPLE TO CONTACT ABOUT THIS PROJECT***

If you would like more information about this project you may wish to contact one of the following people -  
Janie Poutu, Ph. 868 8136 (Thames),  
Denise Messiter, Ph. 862 7521 (POA)  
Joan D'Arth, Ph. 862 8286 (POA)  
Janet Clissold, ph 868 6550 (Thames) or  
Beth Anderson, ph 868 4804 (Tapu)  
Panui have also been sent to all of the  
Marae and kohanga reo in Hauraki. This  
project is a Maori Health initiative.



You are encouraged to discuss this project with someone you know well. Ask them to sign this form as a witness (Ethics Board requirement).

Please make sure you fully understand what this project is about before you sign this form.

When you have read and fully understood everything on this form and the Information Sheet, please read, sign and date the following statement:

**I HAVE READ AND FULLY UNDERSTAND THE PARTICIPANT CONSENT FORM (RED PAPER) AND THE INFORMATION SHEET (YELLOW PAPER). I AGREE TO PARTICIPATE IN THIS PROJECT.**

SIGNATURE OF  
PARTICIPANT:

\_\_\_\_\_

SIGNATURE OF  
A WITNESS:

\_\_\_\_\_

**I GIVE PERMISSION FOR STEPHANIE PALMER TO VIEW MY  
MEDICAL RECORDS:**

SIGNATURE:

\_\_\_\_\_

DATE:

\_\_\_\_\_

## Appendix I: Instrument for Antenatal Interview

1

HEI ORANGA MO NGA WAAHINE HAPU O HAURAKI  
I ROTO I TE WHARE ORA

Antenatal Interview

Participant I.D. \_\_\_\_\_

Please complete tables 1 - 8

\* Mark each source as 0, 1, 2, 3 or 4

0 = none  
1 = a little  
2 = enough  
3 = a lot  
4 = heaps

\* Note 1

- other "experts" = nurses, specialists, midwives, family planning, professionals, etc.;
- whanau = immediate family e.g. mother, father, in-laws, brothers, sisters, grandparents, partner, close friends;
- whanaunga = extended family e.g. cousins, other relations, uncles, aunties;
- whanaunganui = distant relations, friends, acquaintances, other people not necessarily relations.

\* Note 2

- taha tinana = physical attention to your body
- korero = general discussion on being hapu
- tautoko = support in any way
- awhi = love and care
- tikanga = guidelines on being hapu, caring for yourself and baby ; advice on how to have a baby, what to do, etc.

During this pregnancy \_\_\_\_\_


1. Who do you feel gives you the most:-  
(mark each source as 0, 1, 2, 3 or 4)

	your GP	other "experts"	antenatal class	whanau	whanaunga	whanaunganui
attention						
information						
taha tinana						
korero						
tautoko						
awhi						
tikanga						

0 = none  
1 = a little  
2 = enough  
3 = a lot  
4 = heaps

2. How much attention do you get from:-


(a) Your GP      0      1      2      3      4



(b) other  
"experts"      0      1      2      3      4



(c) antenatal  
class      0      1      2      3      4



(d) whanau      0      1      2      3      4



(e) whanaunga      0      1      2      3      4




(f) whanaunganui      0      1      2      3      4




0 = none  
1 = a little  
2 = enough  
3 = a lot  
4 = heaps

3. How much information do you get from:-


(a) Your GP      0      1      2      3      4



(b) other  
"experts"      0      1      2      3      4



(c) antenatal  
class      0      1      2      3      4



(d) whanau      0      1      2      3      4



(e) whanaunga      0      1      2      3      4




(f) whanaunganui      0      1      2      3      4




0 = none  
1 = a little  
2 = enough  
3 = a lot  
4 = heaps

4. How much taha tinana do you get from:-

(a) Your GP      0      1      2      3      4  


(b) other  
"experts"      0      1      2      3      4  


(c) antenatal  
class      0      1      2      3      4  



(d) whanau      0      1      2      3      4  



(e) whanaunga      0      1      2      3      4  


(f) whanaunganui      0      1      2      3      4  


0 = none  
 1 = a little  
 2 = enough  
 3 = a lot  
 4 = heaps


5. How much korero do you get from:-

(a) Your GP      0      1      2      3      4  


(b) other  
"experts"      0      1      2      3      4  


(c) antenatal  
class      0      1      2      3      4  



(d) whanau      0      1      2      3      4  


(e) whanaunga      0      1      2      3      4  


(f) whanaunganui      0      1      2      3      4  



0 = none  
 1 = a little  
 2 = enough  
 3 = a lot  
 4 = heaps

6. How much tautoko do you get from:-

(a) Your GP      0      1      2      3      4  


(b) other  
"experts"      0      1      2      3      4  


(c) antenatal  
class      0      1      2      3      4  


(d) whanau      0      1      2      3      4  


(e) whanaunga      0      1      2      3      4  


(f) whanaunganui      0      1      2      3      4  


0 = none  
 1 = a little  
 2 = enough  
 3 = a lot  
 4 = heaps




7. How much awhi do you get from:-

(a) Your GP      0      1      2      3      4



(b) other  
"experts"      0      1      2      3      4



(c) antenatal  
class      0      1      2      3      4



(d) whanau      0      1      2      3      4



(e) whanaunga      0      1      2      3      4



(f) whanaunganui      0      1      2      3      4



0 = none  
1 = a little  
2 = enough  
3 = a lot  
4 = heaps

8. How much tikanga do you get from:-

(a) Your GP      0      1      2      3      4



(b) other  
"experts"      0      1      2      3      4



(c) antenatal  
class      0      1      2      3      4



(d) whanau      0      1      2      3      4



(e) whanaunga      0      1      2      3      4



(f) whanaunganui      0      1      2      3      4



0 = none  
1 = a little  
2 = enough  
3 = a lot  
4 = heaps

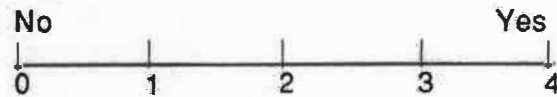
1. Have you ever thought about an "ideal" birth experience e.g. who would be with you?, what position you'd like to give birth in?, what happens afterwards.

☐ yes

☐ a little

☐ no

If so, do you think it will happen like this?



If not, why not?

---

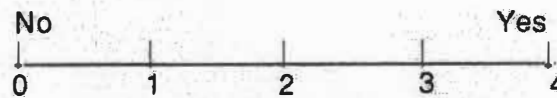


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2. Has your lifestyle changed at all now that you are carrying?



How? 

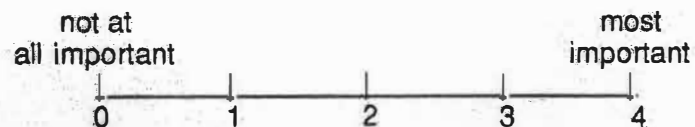
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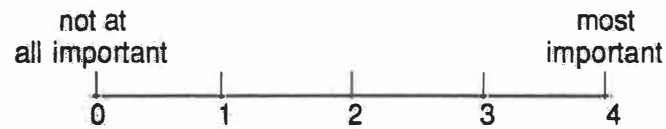


---

3. How important do you think it is to "prepare" yourself for childbirth?



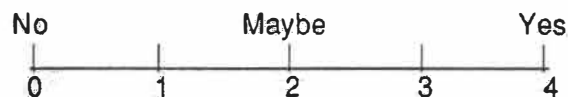
4. How important do you think it is to go to antenatal classes?



5. How important do you think it is to see a doctor when hapu?



6. Do you think antenatal classes help women to have a better birth experience?



7. Are you going to antenatal classes at the moment?

no

yes

other

8. Have you ever been to an antenatal class?

---



---



---

9. Would you ever consider having a homebirth?

---

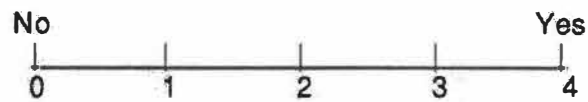


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---

10. Do you feel healthy?



11. Could you be any healthier? In what ways?

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12. Is there anything that you do to help yourself have a better birth experience (e.g. swimming, yoga, etc)?

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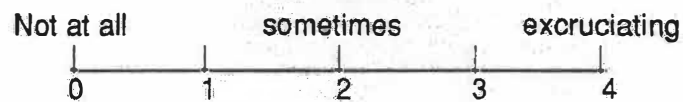


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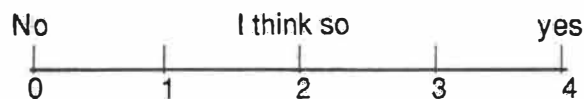


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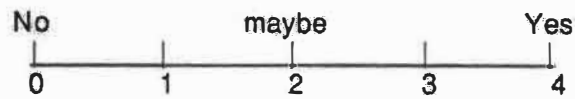
13. Do you think that childbirth is painful?



14. Do you think you will be able to handle the pain?



15. Will you ask for pain relief?



16. Are you scared of having this baby?



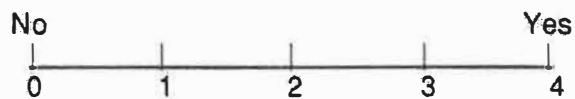
17. What is your greatest fear?

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---

---

18. Do you think this will happen?



19. Is there anything that you do to stop yourself from feeling frightened or scared of childbirth?

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---

20. Who is going to be the boss when you have your baby?

---

---

---

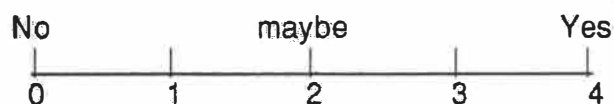
21. How much do you trust the midwives?



22. How much do you trust the doctors?



23. Do you think that you will need help to have the baby?

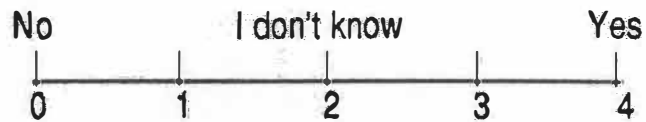


24. Who will have the most control over the birth of your baby?  
(Mark each source as either 0, or 1, or 2, or 3, or 4.)

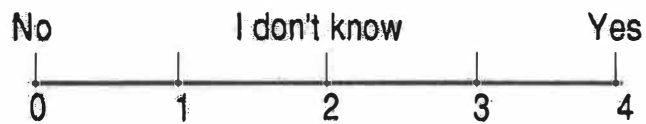
The Doctors	
The midwife	
Yourself	
Your partner	
Your whanau	

0 = no control; 1 = not much control; 2 = some control;  
3 = a lot of control; 4 = most control.

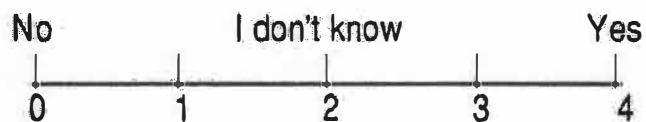
25. Do you think everything will be OK?



26. Are you going to be alright?



27. Will baby be alright?



28. Are you going to take baby's whenua home with you?

---

29. Would you like to say anything else?

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5. Which group do you feel you mostly identify with

(a) I know nothing or very little about my Maori side

☐

(b) Feel comfortable in the Pakeha world and do not wish to know about my Maoritanga

☐

(c) I feel comfortable in the Pakeha world but would like to know more about my Maoritanga

☐

(d) I am sick of the dominant, monocultural Pakeha system and want Maori people to have more power and control of resources

☐

(e) I only take what I need from the Pakeha system in my heart and soul I am Maori

☐

(f) Other

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1. Do you work outside of the home?

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---

2. Have your other children living with you?

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---

3. Do you have help from anyone?

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4. What is the best thing about being hapu?

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---

5. What is the worst thing about being hapu?

---

---

6. What is your overall feeling of wellbeing?



7. Please circle the number which best shows **HOW OFTEN** this item has applied to you over the **PAST FEW WEEKS**

Feeling	not at all	occasionally	some of the time	often	all the time
Satisfied	1	2	3	4	5
Optimistic	1	2	3	4	5
Helpless	1	2	3	4	5
Depressed	1	2	3	4	5
Good natured/ even tempered	1	2	3	4	5
Discontented	1	2	3	4	5
Hopeless	1	2	3	4	5
Confident	1	2	3	4	5
Useful	1	2	3	4	5
Withdrawn	1	2	3	4	5

## Appendix J: Instrument for Medical File Analysis

1

### HEI ORANGA MO NGA WAAHINE HAPU O HAURAKI I ROTO I TE WHARE ORA

#### Analysis of Birth Records

Age: \_\_\_\_\_

Parity: \_\_\_\_\_

Gravida: \_\_\_\_\_

Miscarriage: \_\_\_\_\_

Abortion: \_\_\_\_\_

Contraception used (if any): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

EDD: \_\_\_\_\_ by scan: \_\_\_\_\_

DQB (baby) \_\_\_\_\_

Multiple Pregnancy: ☐ Yes ☐ No # \_\_\_\_\_

Dr's name: \_\_\_\_\_

Specialist: \_\_\_\_\_

Team: \_\_\_\_\_

Other: \_\_\_\_\_

Transfer: ☐ Yes ☐ No Where \_\_\_\_\_

\_\_\_\_\_

Retrospective ☐ Yes ☐ No

Admission Date: \_\_\_\_\_

Participant I.D. \_\_\_\_\_

**ANTENATAL****Blood Profile****Problem**

(a) Group                       

(b) Tests:

RH Factor:	<input type="text" value="+ve"/>	<input type="text" value="-ve"/>
Hepatitis B::	<input type="text" value="+ve"/>	<input type="text" value="-ve"/>
Rubella::	<input type="text" value="+ve"/>	<input type="text" value="-ve"/>
VDRL:	<input type="text" value="+ve"/>	<input type="text" value="-ve"/>
Alpha-protein:	<input type="text" value="low"/>	<input type="text" value="high"/>
Antibodies:	<input type="text" value="+ve"/>	<input type="text" value="-ve"/>

Hb:      Below 10gm \_\_\_\_\_      normal \_\_\_\_\_

(c) Pressure:      High \_\_\_\_\_ Low \_\_\_\_\_ normal \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(d) Anaemia:      Iron deficiency: \_\_\_\_\_

                         Low Hb: \_\_\_\_\_

                         Sickle Cell: \_\_\_\_\_

                         Thalassamia: \_\_\_\_\_

                         Other: \_\_\_\_\_

(e) Transfusions:                  Number \_\_\_\_\_

\_\_\_\_\_

(f) Comment

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Urine**

(a) Protein:	<input type="text" value="normal"/>	<input type="text" value="other"/>	<input type="text" value="Pre-eclampsia"/>
(b) Sugar:	<input type="text" value="normal"/>	<input type="text" value="other"/>	<input type="text" value="Diabetes"/>
(c) Ketones:	<input type="text" value="normal"/>	<input type="text" value="other"/>	<input type="text" value="Diabetes"/>
(d) MSU:	<input type="text" value="normal"/>	<input type="text" value="other"/>	<input type="text" value="Kidney infection"/>

Kidney Infection:

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Diabetes: (a) maternal 

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(b) gestational 

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---

Pre-eclampsia: oedema: 

---

(Toxaemia)

urine: 

---

Blood pressure: 

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**Internal Examinations:** Number: 

---

Uterus:  other 

---

cervix:  other 

---

pelvis  other 

---

smear test:   Cancer 

---

infections: 

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**Abdominal Palpitations**

(a) Fundus:  other \_\_\_\_\_

(b) Foetus: (i) size  other \_\_\_\_\_

(ii) position  other \_\_\_\_\_

Weight (Mother)  other \_\_\_\_\_

Size (Mother)  other \_\_\_\_\_

Foetal Heartbeat:  other \_\_\_\_\_

Presentation (baby)  other \_\_\_\_\_

Position (baby)  other \_\_\_\_\_

Size (baby)  other \_\_\_\_\_

**Placental Incompetency**

Reason: (a) Placenta preavia: \_\_\_\_\_

(b) abruptio placentae: \_\_\_\_\_

(c) overdue: \_\_\_\_\_

(d) impaired by toxemia: \_\_\_\_\_

(e) other: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Smoking: \_\_\_\_\_

Drinking: \_\_\_\_\_

**Obstetric History/Comment:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Medication/Treatments

- (a) Sedation: \_\_\_\_\_
- (b) Fergon: \_\_\_\_\_
- (c) Ferrogrademet: \_\_\_\_\_
- (d) Aperient: \_\_\_\_\_
- (e) Pregemal: \_\_\_\_\_
- (f) Other: \_\_\_\_\_

Reason: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Other Interventions/Diagnosis

- (a) Ultrasound Scanning: \_\_\_\_\_
- (b) Serial Scanning: \_\_\_\_\_
- (c) Amniocentesis: \_\_\_\_\_
- (d) Liquorvolume: \_\_\_\_\_
- (e) Transvaginal Scan: \_\_\_\_\_
- (f) Transplacental Sample: \_\_\_\_\_
- (g) Chronic Villi Sample: \_\_\_\_\_
- (h) Other: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Labour and Delivery**

Reason for admittance: \_\_\_\_\_

Premature labour	<input type="checkbox"/>
Premature rupture of membranes	<input type="checkbox"/>
Prolonged rupture of membranes	<input type="checkbox"/>
Spontaneous labour	<input type="checkbox"/>
Induced labour	<input type="checkbox"/>
Augmented labour	<input type="checkbox"/>
No labour - elective CS	<input type="checkbox"/>

Other \_\_\_\_\_

**Induction Technique**

(i) prostaglandin	<input type="checkbox"/>
(ii) ARM	<input type="checkbox"/>
(iii) Syntocinon	<input type="checkbox"/>
(iv) Augmentation	<input type="checkbox"/>
(v) Other _____	

**Reason for Induction**

(a) hypertension	<input type="checkbox"/>
(b) diabetes	<input type="checkbox"/>
(c) maternal weight loss	<input type="checkbox"/>
(d) maternal social	<input type="checkbox"/>
(e) maternal other	<input type="checkbox"/>

_____	(f) term	<input type="checkbox"/>
_____	(g) post term	<input type="checkbox"/>
	(h) IUGR (intra-uterine growth retardation)	<input type="checkbox"/>
	(i) SFD	<input type="checkbox"/>
	(j) abnormal foetus	<input type="checkbox"/>
	(k) abnormal CTG	<input type="checkbox"/>
	(l) foetal death	<input type="checkbox"/>
	(m) SRM - (no labour)	<input type="checkbox"/>
	(n) APH (haemorrhage)	<input type="checkbox"/>
	(o) other _____	

**Internal Examinations**

Number: \_\_\_\_\_

Findings: \_\_\_\_\_

\_\_\_\_\_

Foetal care (Monitoring)

Ascultation ☐  
 Ultrasound ☐  
 AB ☐  
 Intermittent CTG ☐  
 Cont. ABD CTG ☐  
 Scalp CTG ☐  
 Scalp pH ☐  
 Other \_\_\_\_\_  
 \_\_\_\_\_

Not done ☐

Foetal Distress

SB ☐  
 Meconium only ☐  
 FHR > 160 ☐  
 FHR < 120 ☐  
 other FHR abn ☐  
 Scalp pH < 7.20 ☐  
 Other \_\_\_\_\_  
 \_\_\_\_\_

Not done ☐

***Pain Relief***1st Stage (Labour)

(a) Analgesia  
     none ☐  
     N<sub>2</sub>O ☐  
     Opiate ☐  
     # \_\_\_\_\_

(b) Anaesthesia  
     None ☐  
     epidural ☐  
     spinal ☐

2nd Stage (Delivery)

(a) Anaesthesia  
     none ☐  
     local infiltration ☐  
     Pudanal Block ☐

    Epidural ☐  
     caudal ☐  
     spinal ☐  
     G.A. ☐

#doses \_\_\_\_\_

***Delivery***(a) Presentation:

normal OA ☐  
 PO - face to pubes ☐  
 Ceph - Brow ☐  
 Ceph - Face ☐  
 Breech - ext. legs ☐  
 Breech - flex. legs ☐  
 Shoulder ☐  
 Posterior labour turned OA ☐  
 Other \_\_\_\_\_  
 \_\_\_\_\_

(b) Method:

normal OA	<input type="checkbox"/>			
spont. OP	<input type="checkbox"/>			
Forceps lift-out	<input type="checkbox"/>	<input type="checkbox"/> easy	<input type="checkbox"/> difficult	<input type="checkbox"/> failed
Forceps mid-cavity	<input type="checkbox"/>	<input type="checkbox"/> easy	<input type="checkbox"/> difficult	<input type="checkbox"/> failed
Forceps rotation	<input type="checkbox"/>	<input type="checkbox"/> easy	<input type="checkbox"/> difficult	<input type="checkbox"/> failed
Ventouse	<input type="checkbox"/>	<input type="checkbox"/> easy	<input type="checkbox"/> difficult	<input type="checkbox"/> failed
Breech spont	<input type="checkbox"/>			
Breech assist	<input type="checkbox"/>			
extraction	<input type="checkbox"/>			
Emergency CS	<input type="checkbox"/>			
Elective CS	<input type="checkbox"/>			

(c) Reason for Abnormal Delivery

Previous CS	<input type="checkbox"/>
Poor Progress	<input type="checkbox"/>
Hypertension	<input type="checkbox"/>
Diabetes	<input type="checkbox"/>
Maternal Distress	<input type="checkbox"/>
Other Maternal	<input type="checkbox"/>
Abnormal pres/position	<input type="checkbox"/>
Foetal distress - definitive	<input type="checkbox"/>
Foetal distress - prevention	<input type="checkbox"/>
Prematurity	<input type="checkbox"/>
Failed Forceps	<input type="checkbox"/>
Other: _____	

Liquor: ☐ clear ☐ meconium other \_\_\_\_\_

Ecbolic: ☐ yes ☐ no

<input type="checkbox"/> syntocinon	<input type="checkbox"/> im	
<input type="checkbox"/> syntometrine	<input type="checkbox"/> imor iv	<input type="checkbox"/> with shoulder
<input type="checkbox"/> ergometrine	<input type="checkbox"/> infusion	<input type="checkbox"/> 3rd stage
<input type="checkbox"/> S.C.	<input type="checkbox"/> after placenta	

Placenta: Spontaneous C/S ☐

Controlled Cord Traction ☐

Manual removal ☐

Abnormality \_\_\_\_\_

membranes:

complete

incomplete

cord:

3 vessels

☐

2 vessels

☐

pH

\_\_\_\_\_

base def

\_\_\_\_\_

Perineum:

intact

☐

repair not needed

☐

C/S

☐

tear

☐

suture

☐

episiotomy

☐

suture

☐

episiotomy &amp; tear

☐

3rd degree

☐

other

\_\_\_\_\_

\_\_\_\_\_

Maternal Welfare

Pyrexia (temperature) \_\_\_\_\_

Blood loss

measured	<input type="text"/> m/s
estimated	<input type="text"/> mls
total	<input type="text"/> m/s

Infusion \_\_\_\_\_

Lochia  heavy  light  normalI.V. Line 

excessive bleeding	<input type="text"/>
dehydration	<input type="text"/>
pain relief	<input type="text"/>
augment labour	<input type="text"/>

Gestation  weeks1st stage  hrs  mins2nd stage  mins3rd stage  mins

Admission to DS date \_\_\_\_\_ time \_\_\_\_\_

Membranes ruptured date \_\_\_\_\_ time \_\_\_\_\_

Onset Contractions date \_\_\_\_\_ time \_\_\_\_\_

Full Dilation date \_\_\_\_\_ time \_\_\_\_\_

Infant Delivered date \_\_\_\_\_ time \_\_\_\_\_

Placenta Delivered date \_\_\_\_\_ time \_\_\_\_\_

Medications

(a) fegon	<input type="text"/>	(e) ergometrine	<input type="text"/>
(b) panadol	<input type="text"/>	(f) oxygen	<input type="text"/>
(c) dulcolax	<input type="text"/>	(g) sedation	<input type="text"/>
(d) glycerine soap	<input type="text"/>	(h) antibiotics	<input type="text"/>

other \_\_\_\_\_

Baby Welfare

Weight:

 g m s <2500gms >2500gms

AGPAR

	1 min	5 mins
heartrate		
resp. rate		
reflex irritability		
muscle tone		
colour		

Resuscitation:

not needed

O<sub>2</sub> by mask (without pressure)O<sub>2</sub> by mask (with pressure)

Endotracheal

Mouth-to-nose

Cardiac massage

Soda Bic administrator (alkali)

Drug antagonist (Norcan)

Stimulant

No information

Other \_\_\_\_\_

Incubation: yes noAbnormalities:

jaundiced

 yes no problemDrugs: by injection other

Vitamin K

 yes no

Immunisations

 BCG Hep B None

other \_\_\_\_\_

Premature: yes no

By how much \_\_\_\_\_

Comment: \_\_\_\_\_

**Discharge Information**Discharge Date: \_\_\_\_\_ Length of stay in unit \_\_\_\_\_Postpartum Drugs: \_\_\_\_\_  
\_\_\_\_\_

Infection:

genital	<input type="checkbox"/>
urinary	<input type="checkbox"/>
breast	<input type="checkbox"/>
C/S wound	<input type="checkbox"/>
Other	_____

Problems:

2" PPH (24 hrt)	<input type="checkbox"/>	
removal RPOC	<input type="checkbox"/>	
hypertension	<input type="checkbox"/>	drug treatment <input type="checkbox"/>
thrombosis	<input type="checkbox"/>	
pyrexia	<input type="checkbox"/>	
neurological	<input type="checkbox"/>	
post-natal depression	<input type="checkbox"/>	
other	_____	

Normal ☐ Problem ☐

Comment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Appendix K: Instrument for Postnatal Interview

HEI ORANGA MO NGA WAAHINE HAPU O HAURAKI  
I ROTO I TE WHARE ORA

*Postnatal Interview*

Participant I.D. \_\_\_\_\_

1. How are you?

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2. Is baby well?

---

---

---

3. How did you know that you were in labour?

---

---

---

4. What happened?

---

---

---

5. Was anyone with you?

---

---

---

6. Were there any problems?

---

---

---

7. Are you taking baby's whenua home?

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8. What was the experience of labour like for you?



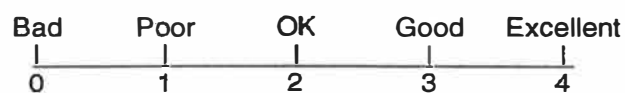
9. What was the actual delivery like for you?



10. Are you happy with the care that you received from the midwives and doctors?



11. What is your overall feeling of wellbeing?



Please circle the number which best shows **HOW OFTEN** this item has applied to you over the **PAST FEW WEEKS**.

Feeling	not at all	occasionally	some of the time	often	all the time
Satisfied	1	2	3	4	5
Optimistic	1	2	3	4	5
Helpless	1	2	3	4	5
Depressed	1	2	3	4	5
Good natured/ even tempered	1	2	3	4	5
Discontented	1	2	3	4	5
Hopeless	1	2	3	4	5
Confident	1	2	3	4	5
Useful	1	2	3	4	5
Withdrawn	1	2	3	4	5

13. Who will you go to if you need help with baby? (e.g. GP, Plunket, nurses, whanau, friends)

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14. Would you like to say anything about your experience of childbirth in this hospital?

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